Resource Management Plan

Vancouver Forest Region

2002/2003

July 31, 2001

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2002/2003 Resource Management Plan for the Vancouver Forest Region

FOREST SERVICE
BRITISH COLUMBIA

July 31, 2001

2002/2003 Resource Management Plan for the Vancouver Forest Region

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2002/2003 Resource Management Plan for the Vancouver Forest Region

PART 1.0
RESOURCE MANAGEMENT PLAN: OVERALL SUMMARY

1.1 BACKGROUND

Forest Renewal BC was created in 1994 to aid in directing and managing an array of investments designed to renew British Columbia's forests and forest economy. To this end Forest Renewal BC was mandated to:

> *plan and implement a program of investments to renew the forest economy of British Columbia by enhancing the productive capacity and environmental values of forest lands, and by creating jobs, providing training for forest workers, and strengthening local communities that depend on the forest industry.*

To achieve this mandate Forest Renewal BC established seven strategic objectives (SO's):

1. Sustainable Harvest (SH)
   Invest in the production of faster-growing, higher-quality stands of second-growth timber.
2. Enhance Environmental Values (EEV)
   Invest in restoring forest watersheds and in promoting environmental stewardship and strong environmental values in BC's forests.
3. Strengthen Sustainable Forest Management (SSFM)
   Invest in the development of relevant, useable, timely information and tools keyed to achieving sustainable forest management.
4. Strengthen and Expand the Value-added Sector
   Strengthen and expand BC's value-added sector through strategic investments with leading industry partners.
5. Stimulate Workforce Development to Strengthen the Forest Sector
   Provide re-employment services to long-term forest-sector workers who are facing permanent displacement.
6. Sustain and Diversify Forest Community Economies
   Provide support to forest-dependent communities that are experiencing significant forest-sector job loss, to help them stabilise and diversify their forest economies and to increase First Nations participation in the forest sector.
7. Increase Forest Renewal BC's Effectiveness and Efficiency
   Increase effectiveness and efficiency to optimise the impact of investments, while maintaining low administrative costs

To achieve these SO's, Forest Renewal BC had to work closely with both the Ministry of Forests (MoF) and the Ministry of Environment, Lands and Parks (MELP)[1].

The purpose and functions of the BC Ministry of Forests , as the stewards of British Columbia's forests, are to:

a) encourage maximum productivity of the forest and range resources in the Province;
b) manage, protect and conserve the forest and range resources of the Crown, having regard to the immediate and long term economic and social benefits they may confer on the Province;
c) plan the use of the forest and range resources of the Crown, so that the production of timber and forage, the harvesting of timber, the grazing of livestock and the realisation of fisheries, wildlife, water, outdoor recreation and other natural resource values are co-ordinated and integrated, in consultation and co-operation with other ministries and agencies of the Crown and with the private sector;
d) encourage a vigorous, efficient and world competitive timber processing industry in the Province; and
e) assert the financial interest of the Crown in its forest and range resources in a systematic and equitable manner.

The purpose and functions of the Ministry of Environment, Lands and Parks was:

a) to encourage and maintain an optimum quality environment through specific objectives for the management and protection of land, water, air and living resources of British Columbia;
b) to undertake inventories and to plan for and assist in planning, as required, for the effective management, protection and conservation of all water, land, air, plant life and animal life;
c) to manage, protect and conserve all water, land, air, plant life and animal life, having regard to the economic and social benefits they may confer on British Columbia;
d) to set standards for, collect, store, retrieve, analyse and make available environmental data;
e) to monitor environmental conditions of specific developments and to assess and report to the minister on general environmental conditions in British Columbia;
f) to undertake, commission and co-ordinate environmental studies;
g) to develop and sustain public information and education programs to enhance public appreciation of the environment;

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[1] In the Spring of 2001, the Ministry of Environment, Lands and Parks was abolished and two new ministries were created: the Ministry of Sustainable Resource Management and Ministry of Water, Air, and Land. At the time of the RMP's drafting, the mandates of these new ministries were still being drafted, however, it is anticipated that the Ministry of Sustainable Resource Management and Ministry of Water, Air, and Land will take on the RMP responsibilities previously held by the Ministry of Environment, Lands and Parks (MELP).

h) to plan for, design, construct, operate and maintain structures necessary for the administration of this Act or for another purpose or function assigned by the Lieutenant Governor in Council;
i) to plan for, co-ordinate, implement and manage a program to protect the welfare of the public in the event of an environmental emergency or disaster.

(Please note that the responsibilities of MELP and MOF have now changed. On June 5, 2001 Order in Council (OIC) 565 rescinded MELP as a Ministry and renamed it the Ministry of Sustainable Resource Management (MSRM). The same OIC also created the Ministry of Water, Land and Air Protection (MWLAP). Some former responsibilities of MOF were also placed within MSRM.)

When the mandates of all three organisations were compared, it became apparent that there was significant overlap between them. These overlaps in mandates required that all three parties work together in order for Forest Renewal BC to realise its first three strategic objectives (SH, EEV and SSFM).

To achieve their SH, EEV and SSFM strategic objectives, Forest Renewal BC established performance targets. These performance targets set tangible goals for each SO.

The SH strategic objective calls for the continuing improvement of immature forests within the Vancouver Forest Region through incremental and backlog silviculture works to achieve a total increased productivity of 710,000 cubic meters of volume in those stands that are treated.

The EEV strategic objective is to complete the restoration of at least 20% of the priority key watersheds by March 2004, with the focus of the program being on the "target" watersheds (the highest 131 priority key watersheds).

The SSFM strategic objective is less tangible, as it deals with areas where a lack of scientific knowledge exists, and where the priorities lie in filling in those knowledge gaps. In general however, the targets for SSFM are:

- By Oct 1, 1999, standard requirements supporting SSFM will be defined for Inventory Information, Environmental Risk Assessment, Decision Tools, and monitoring for Timber Supply Reviews (TSR's) and Land and Resource Management Plans (LRMP's).
- By April 1, 2000, key gaps will be identified in information requirements for specific TSR's and LRMP's and corporate targets will be set for addressing the gaps.
- Evidence will show that monitoring information is being used to confirm or modify strategic plans and decisions.
- Evidence will show that new tools and approaches are being developed in experimental management pilots and considered in strategic processes.
- Evidence will show that forest management is moving towards sustainability (i.e. meeting eligibility standards for international sustainability certification).

Together, the activities conducted under these three strategic objectives are referred to as the land-based activities. The Resource Management Plan (RMP) concept was created to aid Forest Renewal BC in the realisation of their strategic objectives through the achievement of their performance targets. This is done by providing definitive, timely data regarding the best land-based activities to conduct in various areas of the region to maximise returns on investment.

1.2 STRATEGY AT A GLANCE

Overview:

The Resource Management Plan (RMP) addresses land-based activities from the perspective of biological needs and forest resource management priorities. The plan forms a compendium of priorities determined by BC Ministry of Forests (MOF), BC Ministry of Sustainable Resource Management (MSRM),), BC Ministry of Water, Land, and Air Protection (MWLAP), major licensees, woodlot licensees, and other stakeholders. The RMP is designed to provide guidance to all agencies within the forest sector in British Columbia to determine the best activities for investment regardless of the funding source or the agency actually completing the work.

The 2002/2003 RMP expands and improves upon previous Resource Management Plans. Over the course of Forest Renewal BC's existence funding for various activities and programs has changed. Much of what was previously eligible for Forest Renewal BC funding is no longer eligible. This RMP presents priority opportunities for those programs and activities that remain eligible for Forest Renewal BC funding.

It is also important to link and describe how the RMP links to the present Provincial Government's New Era Document, which specifies the government's commitments for the management of British Columbia's forest land. The RMP supports the New Era Document as follows:

1. **Working Forest** – A Working Forest is a defined area or portion of the land base that is dedicated primarily to forest harvesting. The RMP addresses this commitment through repeated reference to the Working Forest, specifically within each of the applicable nine Strategic SSFM Goals, as well as a specific discussion in the text of the RMP.

2. **Strategic Land Use Plans** – The government has made it a high priority to complete strategic-level plans such as Land and Resource Management Plans and Landscape Unit Plans within the next 2 years. Completion of these plans will zone the land base into different areas of management activity and should bring more certainty to resource

management decisions. The completion of Strategic Land Use Plans is very closely linked to the implementation of a Working Forest. Once these Strategic Plans are completed the Working Forest can be clearly defined while ensuring other non-timber and environmental resource values are being adequately managed for across the Regional land base

The support of and completion of Strategic Land Use Plans is a priority objective of the RMP planning process.

3. **Improve Access to World Markets** – Many concerns surround access of British Columbia forest products to world markets. One major issue is the need for consumers to ensure that forest products they purchase are obtained from forests that are sustainably managed. The most common way to ensure this is independent third party verification commonly referred to as Certification. Obtaining acceptable Certification is very important to maintaining the economic, social and environmental needs of British Columbians.

   This RMP contributes in many ways to the achievement of Forest Certification. By demonstrating a thorough and ongoing prioritised effort to reforest, rehabilitate, and manage the forests and forest lands of the Pacific Region for all forest and non-forest attributes, along with a continued effort to improve the knowledge base to address the priority issues that most greatly affect the management of these forests, the RMP plays a key role in helping move this region and its players forward towards Certification.

4. **Maintain Environmental Values** – There is strong concern among the citizens of BC regarding the maintenance or improvement of environment values. British Columbia's forests provide not only timber products, but also other essential resources such as wildlife, fisheries, biodiversity, etc. The RMP helps to address these concerns by providing a prioritised list of the best investments within the region to address the ongoing concerns and issues of site and stream rehabilitation and key species management (fish, wildlife, and timber and non-timber plant species). By providing this information to the various levels of decision-makers, the RMP provides these managers with the information they need to make sound decisions regarding which high priority issues and works should be funded so that the investments will yield the greatest results in the areas of greatest concern. The RMP also ensures that the products produced from the investment of financial resources will be structured on a foundation of scientifically based information and principles.

5. **Living Rivers Strategy** – This initiative is supported by the RMP in several areas. These include various activities related to Watershed

Restoration as well as Resource Inventories, Fish and Fish Habitat, Water Quality and Quantity, Species at Risk, and more. By recommending priority investments in these activities and strategic goals, there is a high probability this initiative will be successful.

6. **Reduce the Regulatory Burden** – By moving from an administratively prescriptive approach of regulatory enforcement to a more results-based approach there is strong potential to reduce excess regulation. The RMP supports this initiative by providing recommendations for investments in activities and knowledge gap research that are based upon sound scientific analysis. By providing these recommendations, the RMP directs the investments within the region towards works already known to provide the greatest returns, thereby reducing the need for a regulatory approach to investment decision-making.

General Strategy:

The Resource Management Plan for the Pacific Region examines land-based resource needs and priorities in terms of:

- Commitments, recommendations, and links to other land and resource management plans.
- The long-term resource implications of current investments.
- The value, risks, and benefits of the various activities and treatments.
- The necessary timelines to meet defined resource management objectives.
- Delivery recommendations, viable options, and consequences of not carrying out the activity.
- Consistency within programs and between delivery centres.
- Providing resource investment recommendations consistent with Forest Renewal BC investment principles and ground rules.

a) Sustainable Harvest

(1) Objectives:

- Increase the volume, economic value, and health of second-growth forests
- Increase the amount of land available for commercial timber production; and
- Support more informed silviculture investment decisions.

(2) Strategies:

- Develop a prioritised list of incremental silviculture opportunities in the region.

- Recommend a strategy to implement activities that would yield the highest possible returns per dollar invested on the forested land base.

(3) Activities:

The eligible activities under SH are:

- Backlog:

  Backlog activities are designed to bring stands that were harvested, damaged, or destroyed before October 1, 1987 and presently insufficiently stocked, back into production.
- Impeded:

  Activities on impeded areas are designed to bring stands that were harvested, damaged, or destroyed before October 1, 1987 and presently sufficiently stocked but impeded by brush, to the free growing stage.
- Enhanced Forestry:

  Enhanced forestry activities treat free growing stands to enhance their value, volume, biodiversity, habitat supply, and/or health.

(4) Management units:

All

b) Enhancing Environmental Values

(1) Objective

To speed the recovery of fish habitat and water quality in priority key watersheds that have been damaged or are seriously threatened by forest development activities.

(2) Strategies

- Focus on the resource values of water quality and fish habitat.
- Identify priority key watersheds to guide program expenditures.
- Maintain an integrated approach towards restoration (i.e. deal collectively with hill slope, riparian and in-stream components).
- Encourage cost sharing with other agencies in order to maximise investment and ensure co-ordination.
- Increase accountability and improve monitoring and effectiveness evaluation.

(3) Watersheds

In the 2001-2002 RMP, the Ministry of Environment, Lands and Parks identified 543 watersheds within the Pacific Region. This most recent RMP adds two more watersheds to the list: Johnstone

Straight and Queen Charlotte Straight. Of these 545 watersheds, 130 have been identified as being eligible for Forest Renewal BC investment.

c) Strengthening Sustainable Forest Management

(1) Objectives:

- Satisfy needs for timber fibre and non-timber forest products in perpetuity.
- Conserve soil and water.
- Sustain the resilience and renewal capacity of forests.
- Support the food security and livelihood needs of forest-dependant communities.
- Conserve biological diversity.
- Provide a more equitable sharing of the benefits from forest uses.

(2) Strategy:

Direct investments toward areas where increased knowledge will strengthen the existing strategic level decisions and plans used to meet the principles of sustainable forest management.

(3) Information Gaps

The highest priority issues that represented knowledge gaps in the Vancouver Forest Region were identified as:

- Unreliable or incomplete resource inventories on the land base.
- Lack of species at risk management strategies and objectives.
- The opportunities and impacts of alternate harvesting systems.
- Lack of fish and fish habitat management strategies and objectives.
- Lack of regional biodiversity management guidelines.
- Lack of ungulate habitat management strategies, objectives, and guidelines.
- Need to strengthen forest modelling.
- Lack of regional water quality and quantity management strategies and objectives.
- Unreliable or incomplete cultural heritage resource inventories.

(4) Management Units:

The SSFM component encompasses all planning units.

1.3 INTRODUCTION:

This Resource Management Plan consists of 3 key components:

- Sustainable Harvest
- Enhancing Environmental Values
- Supporting Sustainable Forest Management

Each of these components represents a forest resource management program administered by the BC Ministry of Forests, BC Ministry of Sustainable Resource Management, BC Ministry of Water, Land, and Air Protection, or all three. The activities and projects within these components are delivered by various agencies or licensees and thus these agencies and licensees have been integral participants in the compilation of this RMP.

The Vancouver Forest Region consists of 22 management units:

Eight Timber Supply Areas:

- Fraser
- Soo
- Strathcona
- Arrowsmith
- Kingcome
- Sunshine Coast
- Mid-Coast
- Queen Charlotte Islands

and 14 Tree Farm Licenses:

- TFL 26 – District of Mission
- TFL 19 - Western Forest Products Ltd.
- TFL 25 - Western Forest Products Ltd.
- TFL 39 - Weyerhaeuser Canada Ltd.
- TFL 45 - International Forest Products Ltd.
- TFL 47 - TFL Forests Limited
- TFL 6 - Western Forest Products Ltd.
- TFL 10 - International Forest Products Ltd.
- TFL 44 - Weyerhaeuser Canada Ltd.
- TFL 46 - TFL Forests Limited
- TFL 54 - International Forest Products Ltd.
- TFL 57 - Iisaak Forest Resources Limited
- TFL 38 - International Forest Products Ltd.
- TFL 37 - Canadian Forest Products Ltd.

It is the responsibility of the Ministry of Forests (in co-ordination with the MSRM and MWLAP) under the terms of the Services Agreement jointly signed by MOF and Forest Renewal BC, to co-ordinate and produce the RMP. In doing so, the MOF compiled the *Guidelines for the Development of Resource Management*

Plans for 2002 – 2003. These guidelines clarified the requirements of the RMP, what was to be included in the submissions, and what the process and timelines were to bring the RMP together.

The RMP includes management issues and data from all agencies, licensees, and management units managing or occupying crown forest land within the Vancouver Forest Region.

1.4 OVERVIEW OF RESOURCE MANAGEMENT ISSUES:

The Timber Supply Review process within the Vancouver Forest Region has resulted in significant reductions in the annual allowable cut in many of the Timber Supply Areas (TSAs). In addition, the presence of "at risk" wildlife species that require special management or no work zones, such as the marbled murrelet, spotted owl, and Vancouver Island marmot, has further eroded the forest land base from which timber may be extracted by conventional means. Combined with the falldown effect now affecting many TSAs, the region is faced with some serious potential wood fibre shortages, both in terms of volume and quality. To alleviate this the Sustainable Harvest portion of this RMP concentrates efforts on bringing backlog areas to free growing and enhancing the rate and quality of fibre production through the application of activities such as juvenile spacing, pruning, and fertilisation

Research efforts within this region, while covering a wide array of potential subjects, concentrate on investigating and assessing methods and treatments having potential to aid in addressing the issues stated above.

1.5 REGIONAL SUMMARIES of the RMP Component Data:

1.5.1 Sustainable Harvest Component:

1.5.1.1 Regional Rollup Enhanced Forestry Table

Vancouver Forest Region Sum of Districts (TSAs & TFLs)
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	32785	29487	29291	27828	28745	37.57	1231852	
Spacing	4809	4703	4842	4641	4741	1784.78	8583011	
Pruning	3011	2370	2296	2253	2138	2271.01	6838500	
Fertilizing	16927	14997	16097	13397	15447	352.91	5973500	
Other	103	153	153	153	153	1511.77	155000	
Totals hectares	57634	51709	52679	48272	51224	395.28	22,781,863	
Planning and prescriptions							572,700	
Total dollars							23,354,563	

Forest Health Enhancement

Forest Health Enhancement	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Spacing	90	90	80	80	80	1,755.03	158000	
Pruning	155	155	155	155	155	1,858.41	288100	
Other treatments	990	690	690	690	690	150.25	148750	
Totals hectares	1235	935	925	925	925	481.63	594,850	

Habitat Supply and Biodiversity Enhancement

Habitat Supply and Biodiversity Enhancement	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Riparian treatments	587	465	387	380	370	2,902.48	1703800	
Non-riparian treatments	205	420	625	620	620	3,150.84	646000	
Totals hectares	792	885	1012	1000	990	2,966.77	2,349,800	

Domestic Range

Domestic Range	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Treatments	0	0	0	0	0	#DIV/0!	0	

Enhanced Forestry Activities - Management Unit Total

Enhanced Forestry Activities - Management Unit Total	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	32785	29487	29291	27828	28745	37.57	1,231,852	
Spacing	4899	4793	4922	4721	4821	1,784.23	8,741,011	
Pruning	3166	2525	2451	2408	2293	2,250.81	7,126,600	
Fertilizing	16927	14,997	16,097	13,397	15,447	352.91	5,973,500	
Other stand tending activities	1885	1728	1855	1843	1833	1,408.03	2653550	
Totals hectares	59661	51801	52761	48354	51306	431.21	25,726,513	
Planning and prescriptions							572,700	
Studies funding							249600	
Total dollars							26,548,813	

1.5.1.2 Regional Rollup Backlog Program Table

Vancouver Forest Region Sum of Districts (TSAs & TFLs)
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1298	1070	815	578	610	41.06	53276	
Site preparation	40	25	5	5	5	1,648.76	66000	
Planting	279	170	65	65	65	1,629.64	454710	
Brushing	321	281	186	50	30	1,444.82	463249	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1937	1547	1071	698	710	535.39	1,037,235	
Seed purchase	11239	9122	6068	4060	3960	0.72	8100	
Total legal obligations							1,045,335	

Backlog Reforestation

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	11239	9122	6068	4060	3960	34.00	382170	
Site preparation	25	100	0	0	0	699.16	17500	
Planting	185	235	90	90	100	1,360.36	251695	
Brushing	1400	1155	515	445	400	1,177.98	1649200	
Totals hectares	12849	10612	6673	4595	4460	179.05	2,300,565	
Seed purchase	48090	36050	30050	30050	30050	0.70	33,500	
Prescriptions and planning dollars							103,500	
Total backlog reforestation							2,437,565	

Impeded areas

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	11710	5989	4040	4435	3004	36.58	428350	
Brushing	3162	2290	1555	930	820	1,187.22	3754000	
Density spacing	30	0	0	0	0	2,497.42	75000	
Totals hectares	14902	8279	5595	5365	3824	285.69	4,257,350	
Prescriptions and planning dollars							138,075	
Total impeded areas							4,395,425	

Site Restoration

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Fill planting	0	20	20	20	20	0.00	0	
Rehabilitation	66	70	60	50	50	1,714.55	113200	
Reforestation	30	30	30	30	30	1,318.99	39600	
Totals hectares	96	120	110	100	100	1,590.41	152,800	
Seed purchase	24,000	18,050	17,020	17,020	17,020	0.70	16,700	
Prescriptions and planning dollars							6,800	
Total site restoration							176,300	

Backlog Program Activities - Management Unit Total

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	24247	16181	10923	9073	7574	35.63	863796	

Site preparation	131	195	65	55	55	1,500.58	196700
Planting	494	455	205	205	215	1,509.83	746005
Brushing	4883	3726	2256	1425	1250	1,201.49	5866449
Density spacing	30	0	0	0	0	2,494.76	75000
Totals hectares	29785	20558	13449	10758	9094	260.13	7747950
Seed purchase	83329	63222	53138	51130	51030	0.70	58300
Prescriptions and planning							248,375
Recommended studies							20,000
Total backlog program							8,074,625

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Vancouver Forest Region Sum of Districts (TSAs & TFLs)

Performance Measures Based on Activities Planned for 2002/2003 based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	494	0	18,820	131	494	4,883	4,929	3,166	16,927	51,729	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	94,422	130,123	80,098	0	507,795		**812,438**
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								**0**
1.5	Est. area that will be declared as free growing (ha)			0								**0**
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	49	0	1,882	125	988	12,744	19,519	14,375	3,047	5,173	
3.3	Estimated total full time equivalent positions (FTE)	0	0	10	1	5	71	108	80	17	29	**322**
4.1	**Forest Health Enhancement (ha)**											**1,235**
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											**792**
5.3	Est. area with secondary value provided to biodiversity (ha)											**0**

1.5.1.4 Proposed Studies List for the Vancouver Forest Region

Study/Research	**Unit**	**Agency**	**$$$$**
Mechanical Roadside Fertilization Study	TFL 46	TFL	$6,000 year 1 $15,000 yr 2, 3
Fertilization responses of juvenile western hemlock to N, P, S	TFL 39	Weyco	$28,000
Riparian Habitat Overview Assessment Proposal	TFL 47	TFL	$30,000
Low density and habitat development	TFL 45 DCR	IFP	$15,000
Grizzly Bear Habitat Overview Assessment	TFL 47	TFL	$50,000
Native Grass Seed for Forestry Use	TFL 47	TFL	$18,600
Species Manipulation Trial	TFL 47	TFL	$5,000 $4000 yr 2, 3
Riparian Habitat Overview Assessment	TFL 47	TFL	$10,000
Ungulate Browse Control Operational Trial	TFL 47	TFL	$7,000 yr 1 $18,000 over 4 yrs
Low density and Habitat development	TFL 45	IFP	$15,000
Examine insect defoliation impacts on Hw in QCI	TFL 39	Weyco	$50,000
Retro-tubing/Fertilization Screening Trials	TFL 39	Weyco	$39,00
Deer Browse Study	TFL 39	Weyco	$10,000

1.5.1.5 Regional Rollup Summary Table

Vancouver Forest Region Sum of Districts (TSAs & TFLs)

Management Unit Summary Table For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					**Plan 2002/03**	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	59,661	51,801	52,761	48,354	51,306	431	25,726,513
Planning, prescriptions and seedlings							822,300
Backlog Program Field Activities	29,785	20,558	13,449	10,758	9,094	260	7,747,950
Planning, prescriptions and seedlings							326,675
Totals	89,446	72,359	66,210	59,111	60,400		34,623,438

Performance Measures

Potential total merchentable volume increment in 65 years	812,438 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	322 FTEs
Forest health enhancement area	1,235 ha
Planned area for specific wildlife forage or habitat maintenance	792 ha
Estimated area with secondary value provided to biodiversity	0 ha

1.5.1.6 Regional Woodlots Rollup Enhanced Forestry Table

Vancouver Forest Region Sum of Woodlots for Crown Land

Enhanced Forestry Table

For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	284	175	198	138		28	7,952	
Spacing	187	163	123	76		1349	252,263	
Pruning	167	140	82	107		1353	225,951	
Fertilizing	222	315	286	229		442	98,124	
Other	0	10	7	7		0		
Totals hectares	860	801	696	557			584,290	
Planning and prescriptions							55,171	
Total dollars							639,461	
Forest Health Enhancement								
Spacing	30	5	5	5		1,232	36,960	
Pruning	3	5	20	23		1353	4,059	
Other treatments	17	3	3	3		1,508	25,636	
Totals hectares	50	13	28	31		1,333	66,655	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	31	28	16	20		3,000	93,000	
Non-riparian treatments	5	5	5	5		1,100	5,500	
Totals hectares	36	33	21	25		2,736	98,500	
Domestic Range								
Treatments								
Enhanced Forestry Activities - Management Unit Total								
Surveys	284	175	198	138		28	7,952	
Spacing	217	168	128	81		1333	289,223	
Pruning	170	145	102	130		1353	230,010	
Fertilizing	222	315	286	229		442	98,124	
Other stand tending activities	53	46	31	35		2342	124,136	
Totals hectares	945	847	745	613		793	749,445	
Planning and prescriptions							55,171	
Studies funding							3,300	
Total dollars							807,916	

1.5.1.7 Regional Woodlots Rollup Backlog Forestry Table

Vancouver Forest Region Sum of Woodlots for Crown Land
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	25	33	5	100		55	1,375	
Site preparation	0	0	0	0				
Planting	0	0	0	0				
Brushing	6	19	3	2		743	4,458	
Max. density spacing	0	0	0	0				
Totals hectares	31	52	8	102		188	5,833	
number of seedlings needed	0	0	0	0			0	
Total legal obligations							5,833	
Backlog Reforestation								
Surveys	5	20	16	16		37	185	
Site preparation	44	33	33	7		1,727	75,988	
Planting	41	38	33	10		1,204	49,364	
Brushing	40	54	91	170		693	27,720	
Totals hectares	130	145	173	203		1,179	153,257	
number of seedlings needed	37,150	39,000	32,500	7,400			0	
Prescriptions and planning dollars							25,239	
Total backlog reforestation							178,496	
Impeded areas								
Surveys	25	20	0	0		40	1,000	
Brushing	10	2	0	0		1,188	11,880	
Density spacing	31	0	0	0		2,042	63,302	
Totals hectares	66	22	0	0		1,154	76,182	
Prescriptions and planning dollars							5,822	
Total impeded areas							82,004	
Site Restoration								
Fill planting	20	0	0	0		1,231	24,620	
Rehabilitation	10	6	0	0		2,391	23,910	
Reforestation	8	0	0	0		1,719	13,752	
Totals hectares	38	6	0	0		1639	62,282	
number of seedlings needed	21,200	5,600	0	0				
Prescriptions and planning dollars							16,888	
Total site restoration							141,452	
Backlog Program Activities - Management Unit Total								
Surveys	55	73	21	116		47	2,560	
Site preparation	54	39	33	7		1,850	99,898	
Planting	69	38	33	10		1,272	87,736	
Brushing	56	75	93	172		787	44,058	
Density spacing	31	0	0	0		2,042	63,302	

Totals hectares	265	225	180	305		1,123	297,554	
number of seedlings needed	58,350	44,600	32,500	7,400			0	
Prescriptions and planning							47,949	
Recommended studies								
Total backlog program							345,503	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

1.5.1.8 Regional Woodlots Rollup Enhanced Forestry Table for Private Lands

Vancouver Forest Region Sum of Woodlots for Private Land

Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	40	32	30	30		27	1,080	
Spacing	25	29	2	0		900	22,500	
Pruning	45	45	30	5		1,551	69,795	
Fertilizing	25	25	25	25		442	11,050	
Other treatments	0	0	0	0				
Totals hectares	135	131	87	60		774	104,425	
Prescription ($)							9,269	
Total dollars							113,694	
Forest Health Enhancement								
Spacing	5	5	0	0		900	4,500	
Pruning	0	5	0	0		0	0	
Other treatments	5	4	3	0		1,200	6,000	
Totals hectares	10	14	3	3		1,050	10,500	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	2	0	0	0		1,200	2,400	
Non-riparian treatments	0	0	0	0			0	
Totals hectares	2	0	0	0		1,200	2,400	
Domestic Range								
Treatments	0	0	0	0			0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	40	32	30	30		27	1,080	
Spacing	30	34	2	0		900	27,000	
Pruning	45	50	30	5		1,551	69,795	
Fertilizing	25	25	25	25		442	11,050	
Other treatments/ activities	7	4	3	3		1,200	8,400	
Totals hectares	147	145	90	63			117,325	
Prescription ($)							9,269	
Studies funding								
Total dollars							126,594	

1.5.1.9 Regional Woodlots Rollup Backlog Forestry Table for Private Lands

Vancouver Forest Region Sum of Woodlots for Private Land

Backlog Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**						**Plan 2002/03**	
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2005/ 2006	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0				
Site preparation	0	0	0	0				
Planting	0	0	0	0				
Brushing	10	5	0	0		1,200	12,000	
Max. density spacing	0	0	0	0				
Totals hectares	10	5	0	0		1,200	1,2000	
number of seedlings needed	0	0	0	0				
Total legal obligations							12,000	
Backlog Reforestation								
Surveys	10	0	0	0		16	160	
Site preparation	22	10	10	10		1,696	37,312	
Planting	22	10	10	10		1,435	31,570	
Brushing	20	22	30	40		1,200	24,000	
Totals hectares	74	42	50	60		1,257	93,042	
number of seedlings needed	11,000	10,000	10,000	10,000			0	
Prescriptions and planning dollars							9,668	
Total backlog reforestation							102,710	
Impeded areas								
Surveys	0	0	0	0				
Brushing	0	0	0	0				
Density spacing	0	0	0	0				
Totals hectares	0	0	0	0				
Prescriptions and planning dollars							1,000	
Total impeded areas							1,000	
Site Restoration								
Fill planting	0	0	0	0	0		0	
Rehabilitation	0	0	0	0	0		0	
Reforestation	0	0	0	0	0		0	
Totals hectares	0	0	0	0	0		0	
number of seedlings needed	0	0	0	0	0			
Prescriptions and planning dollars							0	
Total site restoration							0	

Backlog Program Activities - Management Unit Total

Surveys	10	0	0	0		16	160
Site preparation	22	10	10	10		1,696	37,312
Planting	22	10	10	10		1,435	31,570
Brushing	30	27	30	40		1,200	36,000
Density spacing	0	0	0	0			0
Totals hectares	260	84	47	50		404	105,042
number of seedlings needed	11,000	10,000	10,000	10,000			
Prescriptions and planning							10,668
Recommended studies							
Total backlog program							115,710

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

1.5.2 Enhancing Environmental Values

1.5.2.1 Summary of Regional Priority Watersheds

Category	Number of Watersheds	% of Total watersheds
1	129	24
2	1	<1
2B	59	11
3	184	34
4	9	2
5	163	30
Total Number of Watersheds	545	100
Key Watersheds	227	42
Priority Key Watersheds	131	24
Target Watersheds	50	9
Transitional Watersheds	51	9

1.5.3 Strengthening Sustainable Forest Management

1.5.3.1 Regional Priority Goals

	LRMP	CCFM	TSR	Success	Stakeholders	Linkage	Policy	Common	Urgency	**TOTAL**
Resource Inventories	10	5	10	4	5	5	4	5	5	**53.0**
Species at Risk	9	5	8	5	5	5	3	5	4	**49.0**
Alternate Harvesting	4	7	10	3	5	4	4	5	5	**47.0**
Fish Habitat	10	6	4	5	5	5	2	4	3.5	**44.5**
Biodiversity Guidelines	8	5	5	3	5	3.5	4	4	4	**41.5**
Ungulate Habitat	4	6	6	4	3.5	4	1	4	3.5	**36.0**
Strengthen Forest Models	5	4.5	5	3	4	4	4	3	2	**34.5**
Water Quality and Quantity	4	5.5	1	4	3	3	2	2	3	**27.5**
Cultural Heritage	3	3	2	4	4	4	0	1	4	**25.0**

August 3, 2001

SUSTAINABLE HARVEST OBJECTIVE

A COMPONENT OF THE VANCOUVER FOREST REGION

2002-2003

RESOURCE MANAGEMENT PLAN

SH 03- 07 text.doc

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PART 2:

SUSTAINABLE HARVEST REPORT

2.0 Regional Goals, Objectives and Strategies

2.0.1 Regional Goals

- Enhance the quantity and quality of timber supply and other forest resource values of Crown forests within the region through the application of appropriate silviculture treatments.
- Develop and implement a regional forest stewardship plan that guides silviculture investment within the region.

2.0.2 Regional Objectives

The objectives of the regional silviculture strategy are to:

- Reforest the remaining treatable backlog areas (within reasonable cost) and carry out stand tending treatments on impeded stands to meet free growing requirements.
- Ensure the long-term sustainable harvest approximates the current harvest value and volume levels and produces a diversified mix of products necessary to create and maintain sustainable forest employment.
- Balance treatments that enhance growth and yield such as fertilizing, spacing and forest health activities with those that increase the value of the wood such as pruning.
- Utilize incremental silviculture treatments to contribute to sustainable management of environmental values at the landscape level.

2.0.3 Regional Strategies

Backlog Reforestation Program

- Conduct surveys required to manage the backlog reforestation program.
- Reclassify, site prepare or plant not satisfactorily restocked (NSR) areas by 2003/2004, within acceptable cost limits. A list of remaining NSR opening numbers by TSA is to be reviewed by districts and addressed by 2003/04. TFLs are to review their NSR opening within the same time period.
- Maintain plantation investments through fill planting, vegetation management and forest health treatments, as required, to achieve free growing stands on all backlog

areas by 2011. A listing of backlog impeded openings for TSAs is being reviewed by districts for further action and TFL licensees are to do the same.

- Enhance fibre flow by rehabilitation of roads, landings or stand conversion by 2003/2004 where cost effective.
- Conduct studies and monitor the treatment activities for effectiveness and cost efficiencies and provide recommendations for improving the program.

Enhanced Forestry Program

- Conduct surveys and site evaluations to manage the enhanced forestry program to ensure that only high to medium priority stands are scheduled for treatment.
- Protect prior treatment investments.
- Juvenile space high and medium priority stands to facilitate fertilization and pruning treatments.
- Juvenile space high priority stands in preparation of future commercial thinning.
- Juvenile space in specific management units, where required, to improve fibre flow in the mid and long- term by increasing average piece size over a shorter rotation.
- Fertilize medium and poor site Douglas-fir and western hemlock stands to increase volume and enhance fibre flow.
- Prune high site index Douglas-fir, western hemlock and Sitka spruce higher density stands to increase stand value.
- Conduct studies and monitor the treatment activities for effectiveness and cost efficiencies and provide recommendations for improving the program.
- Improve habitat supply and environmental values through specific treatments that are supplemental to standard enhanced forestry activities;

2.1 Regional Silviculture Priorities and Issues

2.1.1 Regional Priorities

Within the Region a Type 1 incremental silviculture analysis that identified activity priority rating rationalized to the latest timber supply analysis was completed for all TSAs in 1998 and some TSAs and TFLs have a Type 2 forest level silviculture analysis to guide their enhanced forestry program. Most TFLs within the Region completed a Type 1 analysis in 2001. For those TFLs that had not completed a Type 1 or 2 analysis by the latter part of June 2001 and to assist in the FRBC funding allocation process activity, the summary Table included an activity priority rating column. The priority rating was to be guided by the following.

Priority

- Is a relative ranking of activities within a program (e.g. backlog or enhanced forestry) as it relates to meeting management objectives, timber supply/timber quality/habitat targets and strategies for the management unit (exclusive of social objectives). The activity priority is to be consistent with the Type 1 or 2 analysis if one has been completed.

- Activities within a program (e.g. backlog or enhanced forestry) are to be ranked numerically from 1 (highest) to 3 (lowest) relative to one another.
- The ranking should reflect the order of importance in meeting volume and value targets of a management unit and FRBC's strategic objectives for sustainable harvest i.e. invest in the production of faster growing, higher quality stands of second growth timber to increase the potential future harvest (for the Region, ***3.25 million*** cubic metres over the next five years, excluding the tree improvement program); and increase the economic value of timber on all enhanced forest treatment areas (for the Region increase by 5 to10 per cent).
- At this time there are no Sustainable Harvest strategic objective targets for environmental values, however, activities that provide habitat/biodiversity values contribute to achieving the overall timber and economic targets at the management unit level. Performance measures and targets are being developed. In the absence of targets at this time the recommended targets for 02/03 as indicated in the Habitat Supply section of the Performance Measures Table for FRBC investments were to serve as a guide. In addition an interim Habitat Strategy completed in June 2001, assisted in ranking activities and setting some specific management unit targets for activities and projects.
- For TFLs the ranking should refer to activities within the supply block falling within the forest district.

The ranking of activities was to be guided by the following rating criteria where a Type 1 or Type 2 analysis was not completed or where a Type 1 or Type 2 analysis did not completely include habitat/biodiversity issues:

High Priority - "Code 1"

Enhanced Forestry Program

- The activity is included in the timber supply review base case for a management unit (e.g. fertilizing 1000 ha/yr).
- Activities that contribute to maintaining current harvest levels or that mitigate mid-term shortfall in timber supply, e.g. fertilizing stands 10-30 years prior to harvest, or spacing to improve timber flow or spacing to set up stands for commercial thinning. Includes activities that promote faster development of old growth attributes and habitat/biodiversity values that may be limiting timber supply in the mid-term, especially if these activities have an immediate implementation window, e.g. spacing stands at the appropriate age/seral stage to achieve the habitat/biodiversity values.
- Improving or enhancing forest health conditions of second growth stands.
- Activities that positively contribute to a continuous supply of habitat for red-listed and blue-listed species and regionally significant wildlife. Activities with "maintenance of wildlife habitat" as the primary or secondary objective (in the SMP) where wildlife are being managed according to a higher level or strategic plan (including forage plans).

Backlog Reforestation Program

- Backlog – legal obligation (areas under a silviculture prescription and the treatment such as planting or site preparation has commenced).
- Backlog – protecting backlog investment, e.g. appropriate surveys or brushing impeded (stocked but not free growing) areas.
- Backlog - *Reforestation* -NSR areas where initial treatment has not commenced.
- Backlog areas that can be treated to meet habitat/biodiversity objectives according to a higher level or strategic plan (including forage plans).

Medium Priority - "Code 2"

Enhanced Forestry Program

- Overall the activity will contribute towards achieving the volume and value targets and generally have a positive return on investment e.g. stand activities to increase volume or value of long term timber supply.
- Stand tending and pruning to enhance the seral stage distribution and structure of the forest.
- Also consider forest health enhancement activities where these offer greater returns on investment than other incremental silviculture activities or treatments that maintain

or enhance general biodiversity and habitat supply values versus maintaining or enhancing habitat supply for specific targeted species.

- Also consider activities that recruit future habitat for specific species at risk where it is recognized that there will be shortages of habitat in certain areas in the long-term.

Low Priority - "Code 3"

Enhanced Forestry Program

- Overall the activity is considered low in achieving the volume and value targets or does not fit within strategies. There is generally a negative return on investment. Stand tending is a low priority where the security of investment is questionable because of land alienation, pests etc.

2.1.2 2001/2002 Backlog Activity Opportunities Summarized by Priority

The total backlog program activities by priority for the region are as follows;

Table 1: Total Backlog Program Activities by Priority

Backlog $$	Priority 1 $$	Priority 1 % Grand Total	Priority 2 $$	Priority 2 % Grand Total	Priority 3 $$	Priority 3 % Grand Total	Priority Total $$	Total % of Grand Total
Legal								
surveys	53,276	.66	0	0	0	0	53,276	.66
site prep	66,000	.82	0	0	0	0	66,000	.82
planting	454,710	5.63	0	0	0	0	454,710	5.63
brushing	463,249	5.74	0	0	0	0	463,249	5.74
seed	8,100	.1	0	0	0	0	8,100	.1
Total legal $	1,045,335	12.95	0	0	0	0	1,045,335	12.95
Reforest								
surveys	362,170	4.49	20,000	.25	0	0	382,170	4.73
Site prep	17,500	.22	0	0	0	0	17,500	.22
planting	251,695	3.12	0	0	0	0	251,695	3.12
Brushing	1,649,200	20.42	0	0	0	0	1,649,200	20.42
seed	33,500	.41	0	0	0	0	33,500	.41
Presc/plan	103,500	1.28	0	0	0	0	103,500	1.28
Total Refor $	2,417,565	29.94	20,000	.25	0	0	2,437,565	30.19
Impeded								
Surveys	329,525	4.08	98,825	1.22	0	0	428,350	5.30
Brushing	2,837,750	35.14	916,250	11.35	0	0	3,754,000	46.49
Density SP	75,000	.93	0	0	0	0	75,000	.93

Presc/plan	132,075	1.64	6,000	.07	0	0	138,075	1.71
Total imped $	3,374,350	41.79	1,021,075	12.65	0	0	4,395,425	54.44

Site restoration								
Fill plant	0	0	0	0	0	0	0	0
rehab	100,000	1.24	13,200	.16	0	0	113,200	1.4
reforestation	0	0	39,600	.49	0	0	39,600	.49
seed	3,000	.04	13,700	.17	0	0	16,700	.21
Presc/plan	5,000	.06	1,800	.02	0	0	6,800	.08
Total site restore $$	108,000	1.34	68,300	.85	0	0	176,300	2.18

Studies	0	0	20,000	.25	0	0	20,000	.25

Grand total	6,945,250	86.01	1,129,375	13.99	0	0	8,074,625	100

2.1.3 Regional Priority Ranking of Backlog Activities

The general regional priority ranking of backlog categories is as follows:

Table 2:Regional Priority Ranking of Backlog Activities and Rationale

Ranking	Category	Rationale
1	Legal	Backlog prescription in place, legal obligation to ensure area is free growing and treatments have commenced.
2	Reforestation	Adds productive land base back into the timber supply area. Once backlog prescription in place and treatment commenced undertaking new funding commitment to free growing.
3	Impeded (stocked but not free growing due to competing vegetation)	Brushing required to protect past investment and reduce potential mai losses from competing vegetation. Generally TSR assumption is that a managed stand has had competing vegetation treated promptly.
4	Studies	Benefits are improved treatment and cost efficiencies, options for treatment or non-treatment and confirmation that free growing stands are retaining that status.
5	Site Restoration involves the site rehabilitation and reforestation of roads and landing as the principle objective, land or soil stabilization is a secondary benefit. Road stabilization is covered under WRP.	High cost of treatment lowers ranking and return on investment may be marginal in many cases. Exceeding cost cap of $2200/ha may require supporting analysis. It does add land into the productive forestland base and early plantation performance in many areas is promising with certain tree species. Higher priority may be justified where RMZs are reforested in conjunction with RRZ to ensure resource management objective is met for the entire RMA.

2.1.4 Regional Trends in Backlog Activity Opportunities Comparing Last Year's RMP and This Year's RMP

A comparison was made between this year's backlog component of the RMP and last year's submission to evaluate trends in activity levels. A comparison of the proposed hectares treated for year 2002 in both plans indicate that *legal backlog* activities increased (+25%); *reforestation category* activities for brushing increased (+62%); *impeded* surveys and brushing increased 84% and 42% respectively; and *total site restoration* decreased 76%. Overall the proposed total hectares for treatment for all activities is within 10% of last year's RMP estimate for 2002. The backlog surveys and brushing treatment % increase likely reflects the high priority placed on eliminating backlog areas. The hectares of site restoration is down considerably from last year due to an overstatement of the hectares last year by including treatments that were not eligible for SH funding.

The proposed funding request of doing the activities indicated in the plans for 2001 and 2002 were compared. The proposed dollars indicated for *legal backlog* activities are increasing (107%); for the *reforestation category*, brushing increased slightly (+5%) in relation to the large increase in area proposed for treatment, total impeded dollars are increasing (10%); and total site restoration has decreased 86%. Generally the reduced activity levels in planting and in site restoration resulted in total funding requests falling by 10%. This year's RMP indicates the backlog funding request for TSAs and TFLs is 50% and 50% of the total request respectively. Last year for TSAs and TFLs it was 45% and 55% respectively,

Table 3:Regional Trends in Backlog Activity Opportunities

Backlog	**Last Years BL Plan yr 2002 ha**	**This Years BL Plan yr 2002 ha**	**Percentage Change**	**Last Years BL Plan yr 2001 $$**	**This Years BL Plan yr 2002yr $**	**Percentage Change**
Legal						
surveys	1,317	1,298	-1	60,217	53,276	-12
site prep	5	40	+700	11,880	66,000	+456
planting	50	279	+458	153,100	454,710	+197
brushing	180	321	+78	275,300	463,249	+68
seed	n/a	n/a	n/a	4,400	8,100	+84
Total legal	1,552	1,937	+25	504,897	1,045,335	+107
Reforest						
surveys	10,588	11,239	+6	381,750	382,170	0
Site prep	137	25	-82	110,500	17,500	-84
planting	569	185	-67	918,450	251,695	-73
Brushing	862	1,400	+62	1,575,500	1,649,200	+5
seed	n/a	n/a	n/a	27,000	33,500	+24
Presc/plan	n/a	n/a	n/a	131,400	103,500	-21
Total Refor	12,156	12,849	+6	3,144,600	2,437,565	-22
Impeded						
Surveys	6,375	11,710	+84	390,860	428,350	+10
Brushing	2,220	3,162	+42	3,477,675	3,754,000	+8
Density SP	0	30	n/a	0	75,000	na
Presc/plan	n/a	n/a	n/a	127,550	138,075	+8
Total imped	8,595	14,902	+73	3,996,085	4,395,425	+10
Site restoration						
Fill plant	0	0	0	0	0	0
rehab	311	66	-79	1,125,500	113,200	-90
reforestation	72	25	-65	100,500	39,600	-61
seed	n/a	n/a	n/a	4,080	16,700	+309
Presc/plan	n/a	n/a	n/a	44,000	6,800	-85
Total site restore	383	91	-76	1,274,080	176,300	-86
Studies	n/a	n/a	n/a	102,000	20,000	-80
Grand total	22,686	29,779	+31	9,021,662	8,074,625	-10

2.1.5 Recommended Regional Backlog Activity Level

It is recommended that the backlog program be funded at 90 % of total requests (approximately 7.3 million) so that all priority 1 and some priority 2 activities are treated.

2.1.6 2001/2002 Enhanced Forestry Activity Opportunities Summarized by Priority

The total enhanced forestry program opportunities by priority for the region are as follows;

Table 4:Enhanced Forestry Activity Opportunities Summarized by Priority

Enhanced Forestry $$	**Priority 1 $$**	**Priority 1 % Grand Total**	**Priority 2 $$**	**Prty 2 % Grand Total**	**Priority 3 $$**	**Prty 3 % Grand Total**	**Priority Total $$**	**Total % of Grand Total**
Tending								
surveys	1,005,705	3.79	226,147	.85	0	0	1,231,852	4.64
spacing	4,090,000	15.41	4,493,011	16.92	0	0	8,583,011	32.33
pruning	2,977,500	11.22	1,935,000	7.29	1,926,000	7.25	6,838,500	25.76
fertilization	5,463,500	20.58	510,000	1.92	0	0	5,973,500	22.50
other	80,000	.30	75,000	.28	0	0	155,000	.58
Plans/presc	568,700	2.14	4,000	.02	0	0	572,700	2.16
Total	14,185,405	53.43	7,243,158	27.28	1,926,000	7.25	23,354,563	87.97
Forest Health								
Spacing	0	0	158,000	.60	0	0	158,000	.60
pruning	95,000	.36	193,100	.73	0	0	288,100	1.09
other	3,750	.01	145,000	.55	0	0	148,750	.56
Total	98,750	.37	496,100	1.87	0	0	594,850	2.24
Habitat Supply					0	0		
Riparian	1,611000	6.07	92,800	.35	0	0	1,703,800	6.42
Non riparian	360,000	1.36	241,000	.91	45,000	.17	646,000	2.431
total	1,971,000	7.42	333,800	1.26	45,000	.17	2,349,800	8.85
Studies	183,600	.69	66,000	.25	0	0	249,600	.94
Grand Total	16,438,755	61.929	8,139,058	30.66	1,971,000	7.42	26,548,813	100

2.1.7 Regional Priority Ranking of Enhanced Forestry Activities

The general regional priority ranking of enhanced forestry categories/activities is as follows:

Table 5: Regional Priority Ranking of Enhanced Forestry Activities

Ranking	Category/Activity	Rationale
1	Stand Tending -surveys, plans/prescriptions	A plan, prescription or survey must confirm that the stand is a high priority for treatment and must be initiated before a treatment commences.
1	Stand Tending -Fertilization	Treatment increases timber yield and generally has the highest return on investment.
1	Forest Health Activities	May reduce stand volume losses and improve on timber supply operational adjustment factors
2	Studies	Results from studies may improve operational efficiency, and address timber supply issues.
2	Stand Tending -Spacing	Sets stands up for other treatments such as pruning, fertilization, or commercial thinning to maximize response and resources. Free growing stands on salal dominant sites may be fertilized without spacing to facilitate crown closure and shading out of salal. Spacing may move stands forward in the harvest queue filling age class gaps. It controls species to increase stand value and reduce blowdown. Set a minimum annual level to retain an experienced work force and ensure future treatment programs will have optimal response.
3	Stand tending -Pruning	Increases the amount of clear lumber with potential future dollar value benefits using today's standards. Part of a balanced approach to retain future options. Second lift pruning considered for higher priority to protect past investment. Retain a minimum annual level to retain an experienced work force.
3	Habitat Supply -Riparian	May improve short-term supply by relaxing adjacency constraint, or the mimicking of old growth traits and freeing up old growth timber for harvest.
3	Habitat Supply -Non riparian	Ensure habitat and biodiversity are maintained into the future. Works towards achieving future habitat supply and biodiversity objects. Some treatments may accelerate old growth characteristics relaxing harvest constraints on old growth stands.

2.1.8 Regional Trends in Enhanced Forestry Activity Opportunities Comparing Last Year's RMP and This Year's RMP

A comparison was made between this year's enhanced forestry component of the RMP and last year's submission to evaluate trends in activity levels. A comparison of the proposed hectares treated for year 2002 in both plans indicate for the stand tending treatments that spacing and fertilization activities are falling (17%) and (19%) respectively, pruning requests are in line with last year's estimates and surveys increased (12%). The proposed spacing/pruning activities are down 18% and 45% respectively forest health activities have increased approximately 21%. The proposed habitat supply activities are up 292%. Overall the proposed total hectares for treatment for all enhanced forestry activities are about the same as last year.

The proposed cost of doing the activities indicated in the plans for 2001 and 2002 were compared. The proposed dollars indicated for stand tending activities decreased for most activities. This reflects a reduction in hectares proposed for treatment and for pruning , a lower $/unit cost estimate. The funding request for habitat supply activities is up approximately 80%. . The total enhanced forestry funding request for TSAs and TFLs is 46% and 54% respectively. Last year for TSAs and TFLs it was 57% and 43% respectively,
This is proportionally higher for the TSAs because the more expensive pruning and spacing activity level proposed for the TSAs is considerably higher than for the TFLs (i.e. of the total funding request by activity for the region the TSAs account for 67% of spacing, 67% of pruning and 39% of fertilizing). This is partly related to the Type 1 silviculture strategies completed for TSAs which established timber quality objectives and set a per cent target for timber quality.

Table 6: Regional Trends in Enhanced Forestry Activity Opportunities

Enhanced Forestry	**Last Years EF Plan yr 2002 ha**	**This Years EF Plan yr 2002 ha**	**Percentage Change**	**Last Years EF Plan yr 2001 $$**	**This Years EF Plan yr 2002yr $**	**Percentage Change**
Stand Tending						
Surveys	29,205	32,785	+12	1,147,425	1,231,852	+7
Spacing	5,906	4,809	-19	9,973,600	8,583,011	-16
Pruning	2,998	3,011	+0.4	7,528,650	6,838,500	-10
Fertilizaion	18,960	16,927	-11	6,872,976	5,973,500	-15
Other	98	103	+5	250,000	155,000	-61
Plan/presc	n/a	n/a	n/a	571,000	572,700	0
Total	57,167	57,635	+1	26,343,651	23,354,563	-13
Forest Health						
Spacing	110	90	-18	360,000	158,000	-128
Pruning	280	155	-45	228,000	288,100	+21
Other	740	990	+34	120,000	148,750	+19
Total	1,130	1,235	+9	708,000	594,850	-19
Habitat Supply						
Riparian	85	587	+591	232,000	1,703,800	+86
Non-Riparn	130	255	+58	279,005	646,000	+57
Total	215	842	+292	511,005	2,349,800	+78
Studies	n/a	n/a	n/a	577,000	249,600	-131
Grand Total	58,512	59,712	+2.1	28,139,656	26,548,813	-6

2.1.9 Recommended Regional Enhanced Forestry Activity Level

It is recommended that for the enhanced forestry program that a balanced approach be taken between those treatment activities that improve volume and value.

It is suggested within the region that a minimum activity level of 1200 ha of pruning (second lift over first lift) and 3300 ha of spacing be funded to maintain an experienced work force. The stands selected for pruning should have a positive net present value. The pruning treatments maintain future options for wood quality and contribute to achieving regional wood quality targets (2-5% increase of clearwood). The spacing of candidate stands suitable for future fertilization and or pruning will enhance the response to treatment (allow for crown expansion) and set up some stands for commercial thinning opportunities. The species crop tree selection during spacing can also improve future stand value.

Studies, which address timber, supply constraints and evaluate opportunities for improved stand performance, should receive a high priority for funding. Suggest studies be funded up to 2 % of the enhanced forestry budget. Forest health related activities should also receive high priority for funding as they potentially can reduce volume losses from forest health problems. Suggest funding up to 3% of the enhanced forestry budget. Suggest funding habitat supply activities up to 5 % of the enhanced forestry budget particularly if they contribute to sustainable management of environmental values at the landscape level.

Recommend allocating the remainder of the enhanced forestry budget to fertilization (less 6% of the EF budget for surveys and prescriptions). Fertilization is a high priority for funding because of the good return on investment and its direct contribution to achieving the region's volume targets of 750,000 m3/year from enhanced forestry treatments. Where budgets provide for regional fertilization levels over 13000 ha/yr suggest that spacing (and pruning) be increased proportionally to set up stands for future treatments e.g. for every 1000 ha increase in fertilization activities increase spacing 250 ha and pruning 65ha.

Without the completed Type 1 analyses for al TFLs or a liked allocation model suggest a similar funding split to last year between TSAs and TFLs be used for the enhanced forestry program. The higher proportion of spacing and pruning proposed in TSA being at a higher cost may warrant considering increasing the TSA funding allocation above 40% which is in line with this years % of total dollar requests (TSAs, 46% and TFLs 54%)

Table 7: A sample allocation split by enhanced forestry activities following allocation of $7.3 million funding for backlog treatments is as follows (assumes a $23, 000, 000 SH budget):

Activity	Recommended $ Budget Level (RBL)	RBL % of EF Budget 15,700,000	RBL as % of Program or Activity Request	RBL equivalent ha (unit cost =cost cap)	RBL ha as % of Total Activity ha request	Performance Measure From Regional Calculator m3 in 65 yrs
Backlog	$7,300,000	n/a	90% o f BL Program	n/a	n/a	206,171
Fertilization	3,960,000	25.2	66%	12000	71%	360,000
Spacing	6,535,000	41.6	76%	3300	69%	55575
Pruning	2,905,000	18.5	42%	1200	40%	Estimate 1 to 2 % clearwood
Surveys/presc	835,000	5.3	46%	25350	52%	n/a
Forest Health	440,000	2.8	74%	910	74%	Included in spacing
	3% of EF budget					
Studies	240,000		100%	n/a	n/a	n/a
	1.5% of EF budget	1.5				
Habitat Supply	785,000	5	33%	262	31%	n/a
	5%of EF budget					
Total	23,000,000					621,746

In order to meet the regional annual target for volume of 650,000 m3 an additional 1000 hectares would have to be fertilized while maintaining the same spacing and backlog activity levels.

2.1.10 Resource Management Issues

The resource management issues that need to be addressed in this and next year's plan are as follows:

- The completion of the initial treatment of backlog reforestation areas (currently not under a backlog silviculture prescription) including reclassification by 2002/2003 with particular emphasis placed on the acceptable cost limits for treatment. All initial treatments are to commence by 2003/04.
- The completion of the legal obligations under a backlog silviculture prescription and placing high priority on protecting investments in previous backlog treatments by brushing where necessary. Conifer release projects require evaluation for need, and effectiveness of treatment in relation to cost.
- Areas identified under backlog reforestation opportunities require an evaluation for need and cost effectiveness of treatments.

- The maintenance of a fertilization program at a level that will realize optimal volume and value gains in recognition of its generally high return on investment.
- The maintenance of a spacing program that will support future fertilization, pruning and commercial thinning programs and capture optimal harvest flow volume and value gains.
- Ensure future plans and treatment regimes are consistent with the strategy in the Type 1 or Type 2 silviculture analysis..
- Continue to refine the performance measures criteria and per cent contribution of the various activities and apply it to regional, district and management unit basis.
- This fiscal year develop a budget allocation model linked to opportunities, return on investment and timber supply and timber value criteria.
- Develop an improved regional strategy to guide in the attainment of management goals and objectives.

2.2 Summary for Each Management Unit of Silviculture Priorities

Refer to FTP site of Corporate Policy and Planning Branch or Appendix in paper print.

2.3 Management Unit SH Data

Refer to FTP site of Corporate Policy and Planning Branch or Appendix in paper print.

2.4 Type 1 and Type 2 Silviculture Analysis Schedule

Completed TFL Type 1 and Type 2 silviculture analysis documents can be found on the MoF website as follows:

- TFLs http://www.for.gov.bc.ca/hfp/silstrat/map/vancouver-tfl.htm
- TSAs http://www.for.gov.bc.ca/hfp/silstrat/map/vancouver-tsa.htm

Table 8: Vancouver Forest Region Type 1 and 2 Silviculture Analysis Status:

Management Unit TSA/TFL	**Type 1 Y/N/**	**Completion Date**	**Type 2 Y/N**	**Completion Date**	**Comments**
Arrowsmith	Y	1998	Y	2000	Type 2 Draft revision
Fraser	Y	1998	Y	2000	Type 2 Draft revision
Kingcome	Y	1998	N		
Mid Coast	Y	1998	N		
Queen Charlotte Isl	Y	1998	Y	2001	
Soo	Y	1998	Y	2001	
Strathcona	Y	1998	Y	2001	
Sunshine Coast	Y	1998	Y	2001	
TFL 6 - WFP	Y	2001	Y	2001/02	
TFL 10 – IFP	Y	2001	N		
TFL 19 - WFP	N	2001/02	N		

TFL 25 - WFP	N	2001/02	N		
TFL 26 - MISSION	Y	2001	N		
TFL 37 – CFP	Y	2001	N		Silviculture plan
TFL 38 - IFP	Y	2001	N		
TFL 39 – WEY	n/a	n/a	Y	2001	Type 2 in place of Type 1
TFL 43 - Scott Paper	n/a	n/a	N		Deciduous basic silviculture only
TFL 44 - WEY	Y	2001	N		
TFL 45 - IFP	Y	2000	N		Report Completed
TFL 46 TFL	N	2001/02	N		Type 3 ?
TFL 47 TFL	Y	2001	N		
TFL 54 - WEY	N	2001/02	N		
TFL 57 – WEY/IISA	Y	2001	N		

2.5 INTERIM HABITAT SILVICULTURE STRATEGY – PACIFIC REGION

PURPOSE

Silviculture treatments can be used to achieve habitat/biodiversity objectives. The treatments may be designed with a primary objective for habitat/biodiversity, ie, the objectives of timber value and volume may be neutrally or negatively affected; or the treatments may be designed with a secondary objective for habitat/biodiversity, ie, an increase in timber volume/value is the primary objective.

The *Interim Habitat Silviculture Strategy* is intended to guide Multi-Year Agreement (MYA) Holders in planning Sustainable Harvest activities in the Pacific Region for implementation in 2002/03. The allocation of projects will be partially based on the issues and recommendations provided in this document.

BACKGROUND

The 2001/02 MELP SH RMP submission, and the *Vancouver Forest Region's Guidelines for Completing the Sustainable Harvest Component of the Resource Management Plan* (April 2001) are the basic documents that should guide planning for 2002/03. In addition, the information in this document helps to focus the planning of activities to meet habitat/biodiversity objectives under the SH strategic objective.

Performance measures that reflect habitat/biodiversity objectives are currently being developed. In the meantime, MYA Holders should recommend activities and projects that meet the high priority habitat/biodiversity issues for second growth forest management that have been identified in Silviculture Strategies (Type 1 and 2), land use plans, higher level plans, and other strategic plans, eg, Grizzly Bear Conservation Strategy, Northern Spotted Owl Strategy, etc., including strategies summarized in this document.

PROCESS

Information in the *Interim Habitat Silviculture Strategy* should be used by MYA Holders to develop their RMP SH submission for 2002/03 and the corresponding projects under the Regional Investment Plan (RIP). In particular, the RMP should list the studies recommended for implementation, the hectares recommended for treatment by activity (i.e., habitat/biodiversity: riparian and non-riparian), and the corresponding prescriptions that direct the treatments.

The *Interim Habitat Silviculture Strategy* will be refined, and more detail added by August 31, 2001, in preparation for the RIP process. Information from the recently completed TFL Silviculture Strategies, wildlife inventories, higher level plan objectives, and other sources will elaborate on the information contained in this interim strategy.

A workshop will be held in October, for interested MYA Holders, MoF silviculture planners, and MELP biologists to finalize the strategy and develop *a Habitat Silviculture Implementation Plan*. The implementation plan will illustrate which specific projects respond to the issues identified in the strategy, at various funding levels, and when and where they should be implemented, all within an adaptive management framework. It is intended that the *Habitat Silviculture Implementation Plan* be developed along similar time lines to Forest Renewal BC's investment planning (i.e., the RIP).

ISSUES, ACTIVITIES AND RECOMMENDED TARGETS

There are far more opportunities to use silviculture to meet habitat/biodiversity objectives than funding can cover. Table 1 indicates the highest priority issues and the associated silviculture activities that could address the issues. The recommended targets reflect the desire to test and try various treatments, on areas where habitat/biodiversity values are paramount to sustainable forest management.

Table 1 does not include recent information from Silviculture Strategies completed for the Tree Farm Licences. Such strategies should be consulted to fine tune Table 1 information.

Tables 2 and 3 were completed in September, 1998, as part of the MELP RMP submission for implementation in 1999/00.

Detailed information on existing trials for grizzly bear habitat maintenance that require monitoring is available from Colene Wood, CWood@Victoria1.gov.bc.ca.

Table 1. Summary of habitat/biodiversity issues managed using silviculture in the Pacific Region

ISSUES	*DISTRICT*	*ACTIVITY*	*M.U.s*[1]	*Resource Objectives*	*TreatmentTargets (5-yr)*
Establish priorities for activities to maintain grizzly bear forage	Region	Study – look at ranking of threatened GBPU and assess opportunities for silviculture	Mainland and see Table 3 – further information available by Aug 31	Maintain forage species for 2 decades following harvest as per GBCS, in the highest priority landscape units.	Initial study to direct activities and investment – estimate $20,000
Establish priorities for activities to manage ungulate range	Region	Study – look at forage plans, existing and future needs for ungulate range and assess opportunities for silviculture	Region	Recruit UR for decades 4+; spacing can speed up development of forest characteristics to meet the need for forage conditions	Initial study to direct activities and investment – estimate $20,000
Establish priorities for activities to manage riparian values	Region	Study – look at WRP plans/prescriptions, existing and future needs for riparian values and assess opportunities for silviculture	Region	Recruit and speed up development of OG attributes and wildlife habitat	Initial study to direct activities and investment – estimate $30,000
Communicate and extend information on managing habitat through silviculture	Region	Workshop – continue extension from 2001	Region	Improve investment by increasing knowledge	Estimate $10,000
Managing WHAs	QCI	Space, prune – promote certain structure	TBD	Maintain the habitat being managed and buffer areas around the WHA; meet biodiversity requirements in hlp	2 WHAs
Manage riparian biodiversity and habitat	QCI	Prescriptions and space – promote structure, species composition in young	As per FHAP Report, see Table 3	Provide variable density forests for biodiversity and habitat	500 ha or 20 km riparian reserve

ISSUES	***DISTRICT***	***ACTIVITY***	***M.U.s***[1]	***Resource Objectives***	***TreatmentTargets (5-yr)***
		stands and WTPs			
Manage old growth characteristics	QCI	Study and spacing, pruning trials	See Table 3	Identify opportunities and implement treatments	Estimate $5000 and 250 ha
Maintain grizzly bear forage	Campbell River	Study – monitor existing trials	Phillips Arm Blk. EM-X (Weyco)	Maintain forage species for 2 decades following harvest as per GBCS.	18.0 ha
Manage riparian biodiversity and habitat	Campbell River	Space – promote structure, species composition	See Table 2	Provide variable density forests for biodiversity and habitat	500 ha or 20 km riparian reserve
Manage riparian biodiversity and habitat	Campbell River	Study – monitor existing trials	See existing projects (licensee files)	Provide variable density forests for biodiversity and habitat	Area treated to date
Manage biodiversity through tree species distribution	Campbell River	Study – consequences of species conversion deciduous to coniferous and strategies to manage for biodiversity	Campbell River	Provide strategies for managing alder and other deciduous species for biodiversity and timber supply	Estimate $5000
Manage old growth characteristics	Campbell River	Study and spacing, pruning trials	See Table 2	Identify opportunities and implement treatments	Estimate $5000 and 250 ha
Manage old growth characteristics	Sunshine Coast	Study and spacing, pruning trials	Sunshine Coast	Identify opportunities and implement treatments	Estimate $5000 and 250 ha
Maintain grizzly bear forage	Sunshine Coast	Study – monitoring existing trials	Orford River Blk. A46904-1A & 2B (MoF);	Maintain forage species for 2 decades following harvest as per GBCS.	10.9 & 5.7 ha
Maintain grizzly bear forage	Sunshine Coast	Space – reduce stand densities, maintain clustered distribution	Information from Wildlife Branch by Aug 31	Maintain forage species for 2 decades following harvest as per GBCS.	500 ha

ISSUES	***DISTRICT***	***ACTIVITY***	***M.U.s***[1]	***Resource Objectives***	***TreatmentTargets (5-yr)***
		and desired species composition			
Maintain grizzly bear forage	Port McNeill	Study – monitoring existing trials	Kingcome River Blk. 24B (Interfor)	Maintain forage species for 2 decades following harvest as per GBCS.	12.8 ha
Manage old growth and biodiversity characteristics	Port McNeill	Study and spacing, pruning trials	See Table 2	Identify opportunities and implement treatments	Estimate $5000 and 250 ha
Establish priorities to manage for northern spotted owl (NSO) and other listed species	Chilliwack	Study – review NSO and other strategies for opportunities for silviculture and prescriptions	Chilliwack	Recruit and speed up development of forest (old growth) attributes that favour northern spotted owl	Estimate $20,000
Manage for northern spotted owl (NSO) and other listed species	Chilliwack	Space, prune, fertilize and other activities	Chilliwack	Recruit and speed up development of forest attributes that favour northern spotted owl; Guidelines provided in Managing Spotted Owl Habitat (1997).	350 ha
Manage deer winter range	Chilliwack	Prescriptions	Chilliwack	Recruit and speed up development of forest attributes (forage, cover, etc.) that favour deer winter range as identified in the Fraser TSA Deer Plan	500 ha
Manage biodiversity through tree and brush species	Chilliwack	Study – determine strategies and opportunities	Chilliwack	Maintain deciduous component and manage alder	Estimate $10,000
Maintain and enhance grizzly bear forage and habitat	Chilliwack	Study – identify opportunities to use silviculture (links to	North Cascades	Complete a forage analysis for North Cascades grizzly bear population	Estimate $30,000

ISSUES	***DISTRICT***	***ACTIVITY***	***M.U.s***[1]	***Resource Objectives***	***TreatmentTargets (5-yr)***
		SSFM and GBCS) and prescriptions for trials			
Maintain and enhance grizzly bear forage and habitat	Chilliwack	Space, prune, cluster plant, and other treatments	North Cascades	Implement forage plan to meet recovery strategy target (increase population to 150 by 2050)	500 ha
Manage biodiversity and riparian values	Squamish	Study – determine strategies and opportunities	Squamish	Maintain deciduous component and manage alder	Estimate $10,000
Manage for northern spotted owl (NSO) and other listed species	Squamish	Space, prune, fertilize and other activities to promote old growth attributes required in long term owl habitat.	Squamish	Recruit and speed up development of forest attributes that favour northern spotted owl; Guidelines provided in Managing Spotted Owl Habitat (1997).	500 ha
Manage deer winter range (DWR)	Squamish	Study – identify opportunities to recruit DWR using silviculture treatments	Squamish	Recruit deer winter range and forage opportunities identified in the Soo TSA Deer Plan.	Estimate $5000
Manage deer winter range	Squamish	Prescriptions and space – promote certain structure and create forage opportunities	Mashiter Creek, Ring Creek, Indian River, Sloquet Creek	Recruit deer winter range and forage opportunities identified in the Soo TSA Deer Plan.	500 ha (depends on study)
Manage for moose winter range	Squamish	Study and prescriptions – identify opportunities to promote forage and habitat attributes	Elaho & Lillooet Valleys	Recruit moose winter range.	$15,000
Manage for moose	Squamish	Space and prune –	Elaho & Lillooet Valleys	Recruit moose winter range.	500 ha (depends

ISSUES	***DISTRICT***	***ACTIVITY***	***M.U.s***[1]	***Resource Objectives***	***TreatmentTargets (5-yr)***
winter range		identify opportunities to promote forage and habitat attributes			on study results)
Manage biodiversity and riparian values	South Island	Study – determine strategies and opportunities	South Island	Maintain deciduous component and manage alder; recruit old growth attributes	Estimate $10,000
Establish priorities to manage for old growth characteristics and identified wildlife habitat	Arrowsmith	Study and prescriptions – opportunities for silviculture to reduce fragmentation of habitat	Arrowsmith	Recruit and speed up development of forest attributes favoured by identified wildlife species	Estimate $15,000
Maintain grizzly bear forage	Mid-Coast	Prescriptions and clustered spacing at reduced densities	Kwatna; Upper Kimsquit; Lower Kimsquit; Neikite; Kilbella; Chuckwalla; Bella Coola	Maintain forage species for 2 decades following harvest as per GBCS.	20 cutblocks
Maintain grizzly bear forage	Mid-Coast	Study – monitoring existing trials	Kimsquit Blk. 20 (WFP); Kimsquit Blk. 155 (WFP); Talchako Blk 64-1B (Interfor); Talchako Blk. 62-2 (Interfor); Chuckwalla/Kibella TSL A34824 (MoF)	Maintain forage species for 2 decades following harvest as per GBCS.	22.3 + 11.7 + 6.5 + 12.0 + 8.4 ha
Manage riparian values and biodiversity	Mid-Coast	Space – promote structure, species composition	Kwatna Upper Kimsquit Lower Kimsquit Neikite Kilbella Chuckwalla Bella Coola	Provide variable density forests for biodiversity and habitat	1000 ha or 40 km riparian reserve
Manage ungulate	Mid-Coast	Space, prune – lower		Need to recruit UWR for	

ISSUES	***DISTRICT***	***ACTIVITY***	***M.U.s***[1]	***Resource Objectives***	***TreatmentTargets (5-yr)***
winter range (UWR)		than minimum densities		decades 4+; spacing can speed up development of the forest to meet the need for forage conditions	
Maintain ecosystem functions	Mid-Coast	Space – promote structure, species composition		Provide variable density forests for biodiversity and habitat Accelerate recruitment of OG characteristics	5 L.U.s examined
Manage ungulate spring forage	Mid-Coast	Study – determine priority of forage to manage through silviculture	Kwatna Upper Kimsquit Lower Kimsquit Neikite Kilbella Chuckwalla Bella Coola		up to 10 L.U.s examined
Manage biodiversity through tree species distribution	Mid-Coast	Study – determine extent of conversion a)cedar being planted rather than spruce on riparian floodplains b)hemlock regen in originally cedar/spruce/fir stands	CWHds2 CWHms2 CWHvm1 CWHvm2	Need to determine extent of this issue and decide on further action	Estimate $5000 – BEC units listed in the district

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[1] High priority landscape units or forest types or specific areas to which the activity/treatment applies

Table 2. Highest priority FRBC Sustainable Harvest activities by Landscape Unit for MELP Region 1[2]

Landscape Unit	Ungulate Forage, Thermal Cover and Winter Range Recruitment	Grizzly Bear Forage Maintenance	Old Growth Attribute Recruitment	Riparian Management
Adam-Eve	✓		✓	✓
Ahnuhati/Kwalate		✓		
Ahta		✓		
Artlish				✓
Ash			✓	
Bonanza	✓		✓	✓
Cameron	✓		✓	
Caycuse	✓		✓	
Chemainus	✓		✓	
China	✓		✓	
Corrigan	✓		✓	
Effingham	✓		✓	
Fulmore		✓		
Gold	✓		✓	
Gordon	✓		✓	
Gray		✓		
Great Central	✓		✓	
Holberg	✓		✓	✓
Kakweiken		✓		✓
Kaouk	✓		✓	✓
Klanawa	✓		✓	✓
Knight East		✓		
Koprino	✓		✓	
Little Qualicum	✓		✓	
Lower Kingcome		✓		✓
Lower Klinaklina	✓	✓	✓	✓
Lull-Sallie		✓		
Mahatta	✓		✓	✓
Marble				✓
Nahmint	✓		✓	✓
Nahwitti				✓
Nimpkish	✓		✓	✓
Nitinat	✓		✓	✓
Puntledge	✓		✓	

Landscape Unit	Ungulate Forage, Thermal Cover and Winter Range Recruitment	Grizzly Bear Forage Maintenance	Old Growth Attribute Recruitment	Riparian Management
Qualicum	✓		✓	
Rosewall	✓		✓	
San Juan	✓		✓	
Sayward	✓		✓	✓
Sim		✓		
Snowdrift		✓		
Sproat Lake	✓		✓	
Stafford	✓	✓	✓	
Tahsish	✓		✓	
Tlupana				✓
Toquart	✓		✓	✓
Tsitika				✓
Upper Campbell	✓		✓	✓
Upper Kingcome		✓		
Vernon	✓		✓	
Wakeman		✓		✓
White	✓		✓	
Woss	✓		✓	

[2] **Determined by MELP staff, Region 1, 1998**

Table 3. Highest priority FRBC Sustainable Harvest activities by Landscape Unit for Queen Charlotte Islands Forest District[3]

Landscape Unit	Old Growth Attribute Recruitment	Riparian Management
Athlow Bay		
Beresford		
Bigsby		
Eden Lake	✓	✓
Gowgaia		
Gudal		
Hibben		
Honna	✓	✓
Ian	✓	✓
Jalun		
Kunghit Island		
Louise Island	✓	✓
Lower Yakoun	✓	✓
Lyell Island Group		
Masset Inlet	✓	✓
Naikoon		
Otun		
Rennell		✓
Sewell	✓	✓
Skidegate Lake	✓	✓
Skincuttle		
Tasu	✓	✓
Tlell	✓	
Yakoun Lake	✓	✓

[3] **Determined by MELP staff, Regions 1, 6, 1998**

2.6 Vancouver Forest Region Woodlot RMP submissions for the period 2001-2006:

The RMP Submission: Process and Statistics

The request for RMP submissions for the period 2001/02 - 2005/06 was sent out February 13, 2001, mostly via fax, some via email and express mail. The deadline for submission acceptance was March 9, 2001. Since the response quote of 45% by this date was not satisfactory for FRBC, a second invitation to submit the RMP tables plus a questionnaire to find out about the reason for not submitting was sent out on April 10, 2001 to those who had not responded the first time. By the second deadline of April 30, 2001, 76% of the 75 woodlot licensees had sent back some response.

77% of the respondents submitted tables, 18% stated that they had no eligible projects. 19 licensees answered the questionnaire that was sent out in phase 2. 47% of these stated that the reason for no submission was the lack of eligible projects, 24% expressed that they weren't able to find the time. Most of those who checked off "no time" sent in tables in the 2nd phase. 2 licensees claimed that they didn't receive enough help and one offered "no interest" as the reason for no submission.

The 18 woodlot licensees who didn't respond at all were contacted in writing three times and were also phoned, if phoning was an option to reach them.

86% of those who submitted tables submitted the "Enhanced Forestry Table" for the crown land portion, only 52% of them reported projects under the "Backlog Program" (crown land). The "Silviculture Strategy at a glance" form was filled in by almost everyone who submitted tables.

It was also requested to fill in these tables for the private land portion extra, but it was also pointed out that no funds would be available for schedule A land in 2001/02. It is not surprising that only seven such private land "Enhanced Forestry" tables and five "Backlog" tables were submitted.

Content of the Submitted RMP Tables

Some tables had to be changed and missing information often had to be added. This was done as well as possible. The main reasons for having to change the tables were that information was supplied in the wrong place and/or cost figures made no sense because they were far outside the reasonable range without explanatory additional information. The information that was lacking most often was cost figures, the priority number, prescription costs, and number of seedlings required. Forest health surveys (mostly for root rot) were suggested by several licensees but had to be deleted because they are not an activity within the woodlots.

In order to complete the faulty tables, average treatment prices from last year's contracts were used. If no rationale for the priority number was offered, priority 2 was entered unless a higher priority was obviously more suitable.

As the attached summary tables show, the costs of the suggested "Enhanced Forestry" projects ($1.01 Mill.) on crown land for 2001/02 are approximately double the costs of the suggested "Backlog" projects ($0.52 Mill.). Hence the total of all submitted projects for the crown portion of the woodlots is $1.53 million for 2001/02. This means that approximately one fifth of all submitted projects will actually be funded this year. A fair, wise, and transparent selection process will therefore be absolutely crucial.

By far the greatest percentage of all the suggested "Enhanced Forestry" projects falls into the traditional category "stand tending" (93%). "Forest Health Enhancement" projects account for 5% and "Habitat Supply and Biodiversity Enhancement" projects make up only 2%.

The submitted "Backlog Program" projects spread out more evenly over the different program areas: "Site Restoration" accounts for the highest percentage with 39%, "Backlog Reforestation" for as much with 37%, "Impeded Areas" projects make up 15% and "Legal Obligations" just 8%.

The total suggested treatment area decreases rapidly after year 1 (2001/02), which is not surprising given the fact that projects that haven't been funded in the past last have accumulated and were put forward again for the current fiscal year. Also, licensees will have a chance again to submit projects for next year and the years thereafter, which makes it less pressing to submit complete data for years 2 to 5.

The total of the private land projects for 2001/02 is approximately $150,000, 59% of which is backlog program projects. Many licensees pointed out that they would like to see funding for the private lands of their woodlot but only a few of them made the effort to fill in the tables.

Most of the priority designations requested from the licensees for their 2001/02 projects fell into the highest priority class 1. 83% of all "Backlog Program" projects were given priority class 1; the rest fell into priority class 2. Only a slightly different picture unfolded when looking at the priority distribution of the "Enhanced Forestry" projects: 69% priority 1, 26% priority 2 and 5% priority 3.

For completeness it should be mentioned that the "Backlog Program" table asks for seedling/seed costs. Since only a few submissions actually separated seedling costs from planting costs, it was decided to let the planting costs include the seedling costs and to only specify the required seedling numbers.

Licensees' answers to the questions asked

The two questions that were posed on the "Silviculture strategy at a glance" form were:

1) **How could the FRBC Woodlot Land Base programs be applied to better meet your needs?**
2) **Do you need help to improve your silviculture strategy? What kind of help would you need?**

More than half of the licensees who submitted tables answered question 1) and more than a third answered the second question. All the answers can be read in the Appendix.

The **responses to question 1)** can be summarized as follows:

- It should involve less bureaucracy
- Funding should be made available for projects on private land
- Funding should also be made available for activities outside the current programs, i.e. for recreation development and inventory
- Early contract signage should give more flexibility to get the projects done by woodlot licensees themselves
- The project work should be done by woodlot licensees, their friends and the community exclusively and New Forest should not be involved
- It would make the planning much easier, if one could know a year ahead of time if a project will get funded or not
- More assistance (preferably on site) to find out about project eligibility and how to fill in the tables would be appreciated

The essence of the **responses to question 2)** were:

- No, we don't need help to improve the silviculture strategy except for money to improve it ourselves (or with the help of professionals)
- Yes, we need qualified professional advise (preferably on-site) for woodlot-specific silviculture questions
- Funding to improve inventory data (also for forest health) is needed as the basis for a good silviculture strategy
- Long-term planning of funding would help to ensure that priority treatments get materialized (with or without funding)
- Yes, as a new licensee I need help with the silviculture strategy

Ideas for improving the RMP process

- No less than two months time should be given for submitting the RMP tables.
- Asking the woodlot licensee to establish an absolute priority ranking for the submitted projects according to complicated rules is asking for too much. It would make more sense to ask woodlot licensees for a relative priority ranking for their submitted projects for a specific year.
- In order to make a good funding decision for prescription funding for year 2 projects possible, the same amount of project information has to be submitted as for year 1 projects. Otherwise prescriptions for lower priority projects might get funded
- Filling in the tables is a considerable challenge and more assistance is required
- There was a lack of clarity regarding which projects are eligible in which category. It would help if FRBC could provide more examples of eligible projects, especially for the less known categories like "Forest Health Enhancement", "Habitat Supply and Biodiversity Enhancement" and "Site Restoration".
- The tables should provide lines for surveys and prescriptions in each category (except for prescriptions under "Legal Obligations"), otherwise it is too confusing.

APPENDIX 1

MANAGEMENT UNIT CONTACT AND SUPPORT PERSONNEL

FOR

THE SUSTAINABLE HARVEST COMPONENT OF THE 2001 RMP

Appendix 1

Management Unit Contact and Support Personnel for SH

Management Unit	Agency	Contact
Region - All	MoF – Vancouver Forest Region	Larry Sigurdson
Region - All	MoF – Vancouver Forest Region	Bill Luscombe
Branch - All	MELP – Branch	Colene Wood
Pacific Region- All	FRBC- Campbell River	Jim Davis
Fraser TSA	MoF – Chilliwack Forest District	Craig Wickland
Soo TSA	MoF – Squamish Forest District	Michelle Suter
Sunshine Coast TSA	MoF – Sunshine Coast Forest District	Mark Scott
Arrowsmith TSA	MoF - South Island Forest District	Norm Nelleweg/Dean Stewart
Strathcona TSA	MoF - Campbell River Forest District	John Ingram
Kingcome TSA	MoF – Port McNeill Forest District	Andy Waines/Glenn Smith
Mid Coast TSA	MoF Mid Coast Forest District	Dan/Dyble/Doug Grant
Queen Charlotte Isl TSA	Queen Charlotte Isl Forest District	Mark Salzl
TFLs 6, 19, 25	Western Forest Products	Ken Hall
TFLs 10, 38, 45, 47, 54	International Forest Products	Ian Robertson
TFL 26	District of Mission	Kim Allen
TFL37	Canadian Forest Products	Dave Harrison
TFLs 39, 44, 57	Weyerhaeuser	Diane Medves
TFLs 46, 47	Timber West	Jack Turley

APPENDIX 2

WEB ADDRESS WHERE ELECTRONIC COPIES ARE LOCATED

RMP web address is as follows.

http://www.for.gov.bc.ca/ftp/Branches/Corporate Policy & Planning/external/!publish/Resource Management Planning/RMP 2002 2003/Submitted RMPs/Vancouver Region/

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement. The template design allows completion in a consistent format for all management units across the province. Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** Vancouver Forest Region Sum of Districts (TSAs&TFLs)

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

Vancouver Forest Region Sum of Districts (TSAs&TFLs)
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	32785	29487	29291	27828	28745	37.57	1231852	
Spacing	4809	4703	4842	4641	4741	1784.78	8583011	
Pruning	3011	2370	2296	2253	2138	2271.01	6838500	
Fertilizing	16927	14997	16097	13397	15447	352.91	5973500	
Other	103	153	153	153	153	1511.77	155000	
Totals hectares	57634	51709	52679	48272	51224	395.28	22,781,863	
Planning and prescriptions							572,700	
Total dollars							23,354,563	
Forest Health Enhancement								
Spacing	90	90	80	80	80	1,755.03	158000	
Pruning	155	155	155	155	155	1,858.41	288100	
Other treatments	990	690	690	690	690	150.25	148750	
Totals hectares	1235	935	925	925	925	481.63	594,850	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	587	465	387	380	370	2,902.48	1703800	
Non-riparian treatments	205	420	625	620	620	3,150.84	646000	
Totals hectares	792	885	1012	1000	990	2,966.77	2,349,800	
Domestic Range								
Treatments	0	0	0	0	0	#DIV/0!	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	32785	29487	29291	27828	28745	37.57	1,231,852	
Spacing	4899	4793	4922	4721	4821	1,784.23	8,741,011	
Pruning	3166	2525	2451	2408	2293	2,250.81	7,126,600	
Fertilizing	16927	14,997	16,097	13,397	15,447	352.91	5,973,500	
Other stand tending activities	1885	1728	1855	1843	1833	1,408.03	2653550	
Totals hectares	59661	51801	52761	48354	51306	431.21	25,726,513	
Planning and prescriptions							572,700	
Studies funding							249600	
Total dollars							26,548,813	

Chilliwack Forest District SUM TSAs & TFLs
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Stand Tending								
Surveys	3950	4150	4150	4150	3150	30.89	122000	
Spacing	473	560	620	650	650	1099.37	520000	
Pruning	453	442	423	460	460	1273.73	577000	
Fertilizing	1800	1500	1800	1500	1500	300.00	540000	
Other	0	0	0	0	0	0.00	0	
Totals hectares	6676	6652	6993	6760	5760	263.48	1,759,000	
Planning and prescriptions	2200	2200	2200	2200	1000		71,000	
Total dollars							1,830,000	
Forest Health Enhancement								
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	10	10	10	10	10	2,999.70	30000	
Non-riparian treatments	40	40	40	40	40	1,499.96	60000	
Totals hectares	50	50	50	50	50	1,799.93	90,000	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	3950	4150	4150	4150	3150	30.89	122,000	
Spacing	473	560	620	650	650	1,099.36	520,000	
Pruning	453	442	423	460	460	1,273.73	577,000	
Fertilizing	1800	1,500	1,800	1,500	1,500	300.00	540,000	
Other stand tending activities	50	50	50	50	50	1,799.78	90000	
Totals hectares	6726	6652	6993	6760	5760	274.90	1,849,000	
Planning and prescriptions							71,000	
Studies funding							0	
Total dollars							1,920,000	

Squamish Forest District SUM TSA & TSA
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1825	1825	1715	1800	1800	58.33	106447	
Spacing	991	991	991	991	991	1487.09	1473711	
Pruning	208	208	208	208	208	4452.45	927000	
Fertilizing	997	997	997	997	997	300.15	299100	
Other	0	0	0	0	0	0.00	0	
Totals hectares	4021	4021	3911	3996	3996	697.95	2,806,258	
Planning and prescriptions							2,000	
Total dollars							2,808,258	
Forest Health Enhancement								
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	15	0	0	0	0	2,999.80	45000	
Totals hectares	15	0	0	0	0	2,999.40	45,000	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	1825	1825	1715	1800	1800	58.33	106,447	
Spacing	991	991	991	991	991	1,487.09	1,473,711	
Pruning	208	208	208	208	208	4,452.41	927,000	
Fertilizing	997	997	997	997	997	300.15	299,100	
Other stand tending activities	15	0	0	0	0	2,998.80	45000	
Totals hectares	4036	4021	3911	3996	3996	706.51	2,851,258	
Planning and prescriptions							2,000	
Studies funding							0	
Total dollars							2,853,258	

1/4/2006

Sunshine Coast District Sum TSA & TFLs
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1900	1850	1850	1850	1850	53.49	101625	
Spacing	875	900	900	900	900	1738.86	1521500	
Pruning	920	720	640	640	640	2009.13	1848400	
Fertilizing	1100	900	500	500	500	340.91	375000	
Other	0	0	0	0	0	0.00	0	
Totals hectares	4795	4370	3890	3890	3890	802.19	3,846,525	
Planning and prescriptions							12,500	
Total dollars							3,859,025	
Forest Health Enhancement								
Spacing	40	40	30	30	30	1,699.92	68000	
Pruning	30	30	30	30	30	1,999.87	60000	
Other treatments	190	190	190	190	190	499.99	95000	
Totals hectares	260	260	250	250	250	857.67	223,000	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	50	60	60	60	60	2,959.94	148000	
Non-riparian treatments	20	20	20	20	20	2,799.72	56000	
Totals hectares	70	80	80	80	80	2,914.16	204,000	
Domestic Range								
Treatments	1	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	1900	1850	1850	1850	1850	53.49	101,625	
Spacing	915	940	930	930	930	1,737.15	1,589,500	
Pruning	950	750	670	670	670	2,008.84	1,908,400	
Fertilizing	1100	900	500	500	500	340.91	375,000	
Other stand tending activities	261	270	270	270	270	1,145.56	299000	
Totals hectares	5126	4440	3950	3950	3950	833.69	4,273,525	
Planning and prescriptions							12,500	
Studies funding							0	
Total dollars							4,286,025	

1/4/2006

South Island District SUM TSA & TFLs
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	9975	10150	9100	9000	9500	32.47	323925	
Spacing	445	495	395	355	380	1811.24	806000	
Pruning	150	75	120	157	100	2133.29	320000	
Fertilizing	3680	2700	3150	2500	2700	335.03	1232900	
Other	0	50	50	50	50	0.00	0	
Totals hectares	14250	13470	12815	12062	12730	188.27	2,682,825	
Planning and prescriptions							100,875	
Total dollars							2,783,700	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0
Pruning	70	70	70	70	70	1,357.08	95000
Other treatments	0	0	0	0	0	#DIV/0!	0
Totals hectares	70	70	70	70	70	1,356.99	95,000

Habitat Supply and Biodiversity Enhancement

Riparian treatments	150	150	175	175	175	2,999.94	450000
Non-riparian treatments	50	200	350	350	350	5,999.52	300000
Totals hectares	200	350	525	525	525	3,749.87	750,000

Domestic Range

Treatments	0	0	0	0	0	#DIV/0!	0

Enhanced Forestry Activities - Management Unit Total

Surveys	9975	10150	9100	9000	9500	32.47	323,925
Spacing	445	495	395	355	380	1,811.22	806,000
Pruning	220	145	190	227	170	1,886.31	415,000
Fertilizing	3680	2,700	3,150	2,500	2,700	335.03	1,232,900
Other stand tending activities	200	400	575	575	575	3,749.78	750000
Totals hectares	14520	13490	12835	12082	12750	242.96	3,527,825
Planning and prescriptions							100,875
Studies funding							26000
Total dollars							3,654,700

1/4/2006

Campbell River District SUM TSA & TFLs
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	7800	6225	6550	5825	6450	35.33	275550	
Spacing	515	480	580	480	580	2095.72	1079300	
Pruning	440	300	250	250	150	2447.49	1076900	
Fertilizing	5150	5450	4950	4450	4950	320.87	1652500	
Other	0	0	0	0	0	0.00	0	
Totals hectares	13905	12455	12330	11005	12130	293.73	4,084,250	
Planning and prescriptions							180,325	
Total dollars							4,264,575	
Forest Health Enhancement								
Spacing	0	0	0	0	0	0.00	0	
Pruning	5	5	5	5	5	2,417.10	12100	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	5	5	5	5	5	2,410.36	12,100	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	142	65	22	20	20	2,921.07	414800	
Non-riparian treatments	60	135	180	180	180	2,083.16	125000	
Totals hectares	202	200	202	200	200	2,672.17	539,800	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	7800	6225	6550	5825	6450	35.33	275,550	
Spacing	515	480	580	480	580	2,095.70	1,079,300	
Pruning	445	305	255	255	155	2,447.15	1,089,000	
Fertilizing	5150	5,450	4,950	4,450	4,950	320.87	1,652,500	
Other stand tending activities	202	200	202	200	200	2,671.97	539800	
Totals hectares	14112	12460	12335	11010	12135	328.52	4,636,150	
Planning and prescriptions							180,325	
Studies funding							131600	
Total dollars							4,948,075	

Table 1.0.0: Port McNeill Forest Districts Total (TSA + TFL)
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	4945	4070	4795	4095	4895	34.37	169955	1
Spacing	565	505	570	520	520	2123.89	1200000	2
Pruning	450	405	535	400	450	2693.77	1212200	2
Fertilizing	3350	3050	4300	3050	4400	421.64	1412500	3
Other	103	103	103	103	103	1512.14	155000	
Totals hectares	9413	8133	10303	8168	10368	440.87	4,149,655	
Planning and prescriptions							143600	1
Total dollars							4,293,255	
Forest Health Enhancement								
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	120	65	45	40	30	2,633.29	316000	1
Non-riparian treatments	20	25	35	30	30	2,999.25	60000	1
Totals hectares	140	90	80	70	60	2,685.58	376,000	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	4945	4070	4795	4095	4895	34.37	169,955	
Spacing	565	505	570	520	520	2,123.88	1,200,000	
Pruning	450	405	535	400	450	2,693.74	1,212,200	
Fertilizing	3350	3,050	4,300	3,050	4,400	421.64	1,412,500	
Other stand tending activities	243	193	183	173	163	2,189.50	531000	
Totals hectares	9553	8030	10200	8065	10265	473.76	4,525,655	
Planning and prescriptions							143,600	
Studies funding							32000	High
Total dollars							4,701,255	

Mid Coast District SUM TSA & TFLs
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Stand Tending								
Surveys	780	80	80	80	80	70.51	55000	
Spacing	295	20	20	20	20	2338.98	690000	
Pruning	280	10	10	10	10	2060.71	577000	
Fertilizing	0	0	0	0	0	0.00	0	
Other	0	0	0	0	0	0.00	0	
Totals hectares	1355	110	110	110	110	975.64	1,322,000	
Planning and prescriptions							4,000	
Total dollars							1,326,000	
Forest Health Enhancement								
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	50	0	0	0	0	75.00	3750	
Totals hectares	50	0	0	0	0	74.99	3,750	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	10	10	10	10	10	2,999.40	30000	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	10	10	10	10	10	2,998.50	30,000	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	780	80	80	80	80	70.51	55,000	
Spacing	295	20	20	20	20	2,338.95	690,000	
Pruning	280	10	10	10	10	2,060.68	577,000	
Fertilizing	0	0	0	0	0	0.00	0	
Other stand tending activities	60	10	10	10	10	562.40	33750	
Totals hectares	1415	110	110	110	110	958.11	1,355,750	
Planning and prescriptions							4,000	
Studies funding							0	
Total dollars							1,359,750	

Queen Charlotte Islands District Sum TSA & TFLs
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Stand Tending								
Surveys	1610	1137	1051	1028	1020	48.04	77350	
Spacing	650	752	766	725	700	1988.46	1292500	
Pruning	110	210	110	128	120	2727.22	300000	
Fertilizing	850	400	400	400	400	542.94	461500	
Other	0	0	0	0	0	0.00	0	
Totals hectares	3220	2499	2327	2281	2240	661.91	2,131,350	
Planning and prescriptions							58,400	
Total dollars							2,189,750	

Forest Health Enhancement

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Spacing	50	50	50	50	50	1,799.89	90000	
Pruning	50	50	50	50	50	2,419.85	121000	
Other treatments	750	500	500	500	500	66.67	50000	
Totals hectares	850	600	600	600	600	307.06	261,000	

Habitat Supply and Biodiversity Enhancement

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Riparian treatments	105	105	65	65	65	2,999.94	315000	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	105	105	65	65	65	2,999.83	315,000	

Domestic Range

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1610	1137	1051	1028	1020	48.04	77,350	
Spacing	700	802	816	775	750	1,974.99	1,382,500	
Pruning	160	260	160	178	170	2,631.17	421,000	
Fertilizing	850	400	400	400	400	542.94	461,500	
Other stand tending activities	855	605	565	565	565	426.89	365000	
Totals hectares	4175	2599	2427	2381	2340	648.46	2,707,350	
Planning and prescriptions							58,400	
Studies funding							60000	
Total dollars							2,825,750	

Vancouver Forest Region Sum of Districts (TSAs&TFLs)
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	1298	1070	815	578	610	41.06	53276	
Site preparation	40	25	5	5	5	1,648.76	66000	
Planting	279	170	65	65	65	1,629.64	454710	
Brushing	321	281	186	50	30	1,444.82	463249	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1937	1547	1071	698	710	535.39	1,037,235	
Seed purchase	11239	9122	6068	4060	3960	0.72	8100	
Total legal obligations							1,045,335	
Backlog Reforestation								
Surveys	11239	9122	6068	4060	3960	34.00	382170	
Site preparation	25	100	0	0	0	699.16	17500	
Planting	185	235	90	90	100	1,360.36	251695	
Brushing	1400	1155	515	445	400	1,177.98	1649200	
Totals hectares	12849	10612	6673	4595	4460	179.05	2,300,565	
Seed purchase	48090	36050	30050	30050	30050	0.70	33,500	
Prescriptions and planning dollars							103,500	
Total backlog reforestation							2,437,565	
Impeded areas								
Surveys	11710	5989	4040	4435	3004	36.58	428350	
Brushing	3162	2290	1555	930	820	1,187.22	3754000	
Density spacing	30	0	0	0	0	2,497.42	75000	
Totals hectares	14902	8279	5595	5365	3824	285.69	4,257,350	
Prescriptions and planning dollars							138,075	
Total impeded areas							4,395,425	
Site Restoration								
Fill planting	0	20	20	20	20	0.00	0	
Rehabilitation	66	70	60	50	50	1,714.55	113200	
Reforestation	30	30	30	30	30	1,318.99	39600	
Totals hectares	96	120	110	100	100	1,590.41	152,800	
Seed purchase	24,000	18,050	17,020	17,020	17,020	0.70	16,700	
Prescriptions and planning dollars							6,800	
Total site restoration							176,300	
Backlog Program Activities - Management Unit Total								
Surveys	24247	16181	10923	9073	7574	35.63	863796	
Site preparation	131	195	65	55	55	1,500.58	196700	
Planting	494	455	205	205	215	1,509.83	746005	
Brushing	4883	3726	2256	1425	1250	1,201.49	5866449	
Density spacing	30	0	0	0	0	2,494.76	75000	
Totals hectares	29785	20558	13449	10758	9094	260.13	7747950	
Seed purchase	83329	63222	53138	51130	51030	0.70	58300	
Prescriptions and planning							248,375	
Recommended studies							20,000	
Total backlog program							8,074,625	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

1/4/2006

Chilliwack Forest District SUM TSAs & TFLs
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	76	39	69	32	84	30.16	2280	
Site preparation	0	0	0	0	0	0.00	0	
Planting	6	0	0	0	0	999.83	6000	
Brushing	22	21	10	0	0	1,935.10	41800	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	103	61	79	32	84	485.24	50,080	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							50,080	
Backlog Reforestation								
Surveys	29	12	8	0	0	30.00	870	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	29	12	8	0	0	29.99	870	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							870	
Impeded areas								
Surveys	795	500	500	250	129	30.00	23850	
Brushing	2	0	0	0	0	799.60	1600	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	797	500	500	250	129	31.93	25,450	
Prescriptions and planning dollars							0	
Total impeded areas							25,450	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	900	551	577	282	213	30.01	27000	
Site preparation	0	0	0	0	0	0.00	0	
Planting	6	0	0	0	0	999.17	6000	
Brushing	24	21	10	0	0	1,838.75	43400	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	929	573	587	282	213	82.22	76400	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							76,400	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

1/4/2006

Squamish Forest District SUM TSA & TSA
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	400	400	400	400	400	50.00	20000	
Site preparation	0	0	0	0	0	0.00	0	
Planting	30	60	20	20	20	1,199.96	36000	
Brushing	30	30	30	30	30	1,249.96	37500	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	460	490	450	450	450	203.26	93,500	
Seed purchase	30	30	30	30	30	10.00	300	
Total legal obligations							93,800	
Backlog Reforestation								
Surveys	500	500	500	400	400	49.00	24500	
Site preparation	25	100	0	0	0	699.97	17500	
Planting	65	155	35	35	35	1,015.38	66000	
Brushing	110	110	110	100	100	1,222.73	134500	
Totals hectares	700	865	645	535	535	346.43	242,500	
Seed purchase	50	50	50	50	50	10.00	500	
Prescriptions and planning dollars							2,000	
Total backlog reforestation							245,000	
Impeded areas								
Surveys	900	900	900	900	900	70.00	63000	
Brushing	100	100	100	100	100	1,249.99	125000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1000	1000	1000	1000	1000	188.00	188,000	
Prescriptions and planning dollars							0	
Total impeded areas							188,000	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	1800	1800	1800	1700	1700	59.72	107500	
Site preparation	25	100	0	0	0	699.89	17500	
Planting	95	215	55	55	55	1,073.65	102000	
Brushing	240	240	240	230	230	1,237.49	297000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	2160	2355	2095	1985	1985	242.59	524000	
Seed purchase	80	80	80	80	80	10.00	800	
Prescriptions and planning							2,000	
Recommended studies							0	
Total backlog program							526,800	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

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Sunshine Coast District Sum TSA & TFLs
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	50	10	20	20	0	75.00	3750	
Site preparation	0	0	0	0	0	0.00	0	
Planting	3	0	0	0	0	1,319.56	3960	
Brushing	30	30	20	20	0	1,154.92	34650	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	83	40	40	40	0	510.29	42,360	
Seed purchase	3600	0	0	0	0	0.50	1800	
Total legal obligations							44,160	
Backlog Reforestation								
Surveys	450	250	0	0	0	40.00	18000	
Site preparation	0	0	0	0	0	0.00	0	
Planting	20	10	0	0	10	1,259.94	25200	
Brushing	40	20	0	0	0	1,154.97	46200	
Totals hectares	510	280	0	0	10	175.29	89,400	
Seed purchase	12000	0	0	0	0	0.50	6,000	
Prescriptions and planning dollars							6,000	
Total backlog reforestation							101,400	
Impeded areas								
Surveys	450	300	50	0	0	75.00	33750	
Brushing	250	100	25	0	0	1,699.99	425000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	700	400	75	0	0	655.35	458,750	
Prescriptions and planning dollars							0	
Total impeded areas							458,750	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	20	20	10	0	0	2,199.78	44000	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	20	20	10	0	0	2,199.12	44,000	
Seed purchase	6,000	0	0	0	0	0.50	3,000	
Prescriptions and planning dollars							5,000	
Total site restoration							52,000	
Backlog Program Activities - Management Unit Total								
Surveys	950	560	70	20	0	58.42	55500	
Site preparation	20	20	10	0	0	2,199.12	44000	
Planting	23	10	0	0	10	1,267.39	29160	
Brushing	320	150	45	20	0	1,580.76	505850	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1313	740	125	40	10	483.24	634510	
Seed purchase	21600	0	0	0	0	0.50	10800	
Prescriptions and planning							11,000	
Recommended studies							0	
Total backlog program							656,310	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

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South Island District SUM TSA & TFLs
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	5000	5250	3500	2000	2000	30.40	152000	
Site preparation	0	0	0	0	0	0.00	0	
Planting	10	5	0	0	0	1,449.42	14500	
Brushing	700	450	200	125	100	1,155.00	808500	
Totals hectares	5710	5705	3700	2125	2100	170.75	975,000	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							40,000	
Total backlog reforestation							1,015,000	
Impeded areas								
Surveys	4175	889	425	325	175	37.02	154575	
Brushing	1065	915	615	265	165	1,074.41	1144250	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	5240	1804	1040	590	340	247.87	1,298,825	
Prescriptions and planning dollars							52,200	
Total impeded areas							1,351,025	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	40	40	40	40	40	1,400.00	56000	
Reforestation	5	5	5	5	5	1,320.00	6600	
Totals hectares	45	45	45	45	45	1,390.96	62,600	
Seed purchase	5,000	5,000	5,000	5,000	5,000	0.67	3,350	
Prescriptions and planning dollars							0	
Total site restoration							65,950	
Backlog Program Activities - Management Unit Total								
Surveys	9175	6139	3925	2325	2175	33.41	306575	
Site preparation	40	40	40	40	40	1,399.65	56000	
Planting	15	10	5	5	5	1,405.36	21100	
Brushing	1765	1365	815	390	265	1,106.37	1952750	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	10995	7554	478[illegible]	2760	2485	212.50	2336425	
Seed purchase	5000	5000	5000	5000	5000	0.67	3350	
Prescriptions and planning							92,200	
Recommended studies							0	
Total backlog program							2,431,975	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Campbell River District SUM TSA & TFLs
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	26	26	26	26	26	32.72	851	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	26	0	26	0	0	1,145.85	29799	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	52	26	52	26	26	589.05	30,650	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							30,650	
Backlog Reforestation								
Surveys	390	240	190	140	140	33.72	13150	
Site preparation	0	0	0	0	0	0.00	0	
Planting	5	5	0	0	0	1,318.42	6600	
Brushing	0	5	5	0	0	0.00	0	
Totals hectares	395	250	195	140	140	50.00	19,750	
Seed purchase	6000	6000	0	0	0	1.00	6,000	
Prescriptions and planning dollars							1,600	
Total backlog reforestation							27,350	
Impeded areas								
Surveys	305	85	0	10	0	35.98	10975	
Brushing	150	30	20	30	20	1,143.98	171600	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	455	115	20	40	20	401.25	182,575	
Prescriptions and planning dollars							7,850	
Total impeded areas							190,425	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	6	10	10	10	10	2,197.80	13200	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	6	10	10	10	10	2,192.69	13,200	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							13,200	
Backlog Program Activities - Management Unit Total								
Surveys	721	351	216	176	166	34.64	24976	
Site preparation	6	10	10	10	10	2,192.69	13200	
Planting	5	5	0	0	0	1,312.91	6600	
Brushing	176	35	51	30	20	1,144.21	201399	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	908	401	277	216	196	271.09	246175	
Seed purchase	6000	6000	0	0	0	1.00	6000	
Prescriptions and planning							9,450	
Recommended studies							0	
Total backlog program							261,625	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

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Table 2.0.0: Port McNeill Forest Districts Total (TSA + TFL)
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	173	50	50	50	50		6540	1
Site preparation	35	20	0	0	0	1,649.76	57750	1
Planting	150	45	45	45	45	1,524.95	228750	1
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	358	115	95	95	95	818.49	293,040	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							293,040	
Backlog Reforestation								
Surveys	2270	970	570	420	420	25.00	84450	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	25	10	5	5	5	1,178.81	29475	
Brushing	0	20	0	20	0	0.00	0	
Totals hectares	2295	1000	575	445	425	49.64	113,925	
Seed purchase	40	0	0	0	0	149.98	6000	
Prescriptions and planning dollars							33000	
Total backlog reforestation							152,925	
Impeded areas								
Surveys	4235	3115	1965	2750	1600	25.00	87950	1
Brushing	1275	1105	755	495	495	600.00	1135550	1
Density spacing	30	0	0	0	0	2,499.58	75000	
Totals hectares	5540	4220	2720	3245	2095	234.39	1,298,500	
Prescriptions and planning dollars							63100	1
Total impeded areas							1,361,600	
Site Restoration								
Fill planting	0	20	20	20	20	0.00	0	
Rehabilitation	0	0	0	0	0	1,500.00	0	1
Reforestation	5	5	5	5	5	600.00	6600	1
Totals hectares	5	25	25	25	25	1,315.53	6,600	
Seed purchase	5000	5020	5020	5020	5020	0.02	3350	
Prescriptions and planning dollars							1800	1
Total site restoration							11,750	
Backlog Program Activities - Management Unit Total								
Surveys	6678	4135	2585	3220	2070	26.80	178940	
Site preparation	35	20	0	0	0	1,649.25	57750	
Planting	180	80	75	75	75	1,471.09	264825	
Brushing	1275	1125	755	515	495	890.62	1135550	
Density spacing	30	0	0	0	0	2,499.08	75000	
Totals hectares	8198	5360	3415	3810	2640	208.84	1712065	
Seed purchase	5040	5020	5020	5020	5020	1.86	9350	
Prescriptions and planning							97,900	
Recommended studies							0	1
Total backlog program							1,819,315	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Mid Coast District SUM TSA & TFLs
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	10	0	0	0	0	991.80	9920	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	10	0	0	0	0	991.01	9,920	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							9,920	
Impeded areas								
Surveys	750	150	150	150	150	62.33	46750	
Brushing	270	20	20	20	20	2,448.14	661000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1020	170	170	170	170	693.87	707,750	
Prescriptions and planning dollars							4,725	
Total impeded areas							712,475	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	750	150	150	150	150	62.33	46750	
Site preparation	0	0	0	0	0	0.00	0	
Planting	10	0	0	0	0	990.91	9920	
Brushing	270	20	20	20	20	2,448.08	661000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1030	170	170	170	170	696.74	717670	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							4,725	
Recommended studies							0	
Total backlog program							722,395	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

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Queen Charlotte Islands District Sum TSA & TFLs
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	573	545	250	50	50	34.65	19855	
Site preparation	5	5	5	5	5	1,649.01	8250	
Planting	90	65	0	0	0	1,999.96	180000	
Brushing	213	200	100	0	0	1,499.98	319500	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	881	815	355	55	55	598.86	527,605	
Seed purchase	12000	12000	0	0	0	0.50	6000	
Total legal obligations							533,605	
Backlog Reforestation								
Surveys	2600	1900	1300	1100	1000	34.31	89200	
Site preparation	0	0	0	0	0	0.00	0	
Planting	50	50	50	50	50	1,999.92	100000	
Brushing	550	550	200	200	200	1,200.00	660000	
Totals hectares	3200	2500	1550	1350	1250	265.37	849,200	
Seed purchase	30000	30000	30000	30000	30000	0.50	15,000	
Prescriptions and planning dollars							20,900	
Total backlog reforestation							885,100	
Impeded areas								
Surveys	100	50	50	50	50	75.00	7500	
Brushing	50	20	20	20	20	1,799.93	90000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	150	70	70	70	70	649.97	97,500	
Prescriptions and planning dollars							10,200	
Total impeded areas							107,700	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	20	20	20	20	20	1,319.80	26400	
Totals hectares	20	20	20	20	20	1,319.27	26,400	
Seed purchase	13,000	13,030	12,000	12,000	12,000	0.54	7,000	
Prescriptions and planning dollars							0	
Total site restoration							33,400	
Backlog Program Activities - Management Unit Total								
Surveys	3273	2495	1600	1200	1100	35.61	116555	
Site preparation	5	5	5	5	5	1,646.38	8250	
Planting	160	135	70	70	70	1,914.87	306400	
Brushing	813	770	320	220	220	1,315.49	1069500	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	4251	3405	1995	1495	1395	353.02	1500705	
Seed purchase	55000	55030	42000	42000	42000	0.51	28000	
Prescriptions and planning							31,100	
Recommended studies							20,000	
Total backlog program							1,579,805	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Vancouver Forest Region Sum of Districts (TSAs&TFLs)
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.77	0	0	0	2.9	0.41	0.25	0	0.46	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	
Provincial factors for estimated value gain at harvest							5-15%	15-30%	1-5%	
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	Nursery Seedling Production	Silviculture Surveys
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	494		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	494		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			32,785
Total backlog surveys from the backlog table.			24,247
33% of all silviculture surveys			18,820
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply		(A)	0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			18,820
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR)			
Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas)			
Estimate area that will be classified as free growing after a survey in 2002/2003			

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity.

Vancouver Forest Region Sum of Districts (TSAs&TFLs)
Performance Measures Based on Activities Planned for 2002/2003
Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improve-ment	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	494	0	18,820	131	494	4,883	4,929	3,166	16,927	51,729	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	94,422	130,123	80,098	0	507,795		812,438
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	49	0	1,882	125	988	12,744	19,519	14,375	3,047	5,173	
3.3	Estimated total full time equivalent positions (FTE)	0	0	10	1	5	71	108	80	17	29	322
4.1	**Forest Health Enhancement (ha)**											1,235
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											792
5.3	Est. area with secondary value provided to biodiversity (ha)											0

Vancouver Forest Region Sum of Districts (TSAs&TFLs)
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	59,661	51,801	52,761	48,354	51,306	431	25,726,513
Planning, prescriptions and seedlings							822,300
Backlog Program Field Activities	29,785	20,558	13,449	10,758	9,094	260	7,747,950
Planning, prescriptions and seedlings							326,675
Totals	89,446	72,359	66,210	59,111	60,400		34,623,438

Performance Measures	
Potential total merchentable volume increment in 65 years	812,438 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	322 FTEs
Forest health enhancement area	1,235 ha
Planned area for specific wildlife forage or habitat maintenance	792 ha
Estimated area with secondary value provided to biodiversity	0 ha

2002/03 – 2006/07 Sustainable Harvest Component of the Chilliwack District Resource Management Plan

Silviculture Strategy Summary

1) The primary purpose of the of the Sustainable Harvest Resource Management Plan is to priorize activities to meet the objectives specified in the Type 1 Silvilculture Strategy completed September 30, 1998.

Background

A Meeting was held at the Chilliwack Forest District on June 19, 2001 to discuss Issues and priorities relating to Resource Management Plan. The Main topics for discussion included;

1) Over view of Priorities shown on 1998 Type 1 analysis
2) Review of Last Years RMP targets and accomplishments
3) Habitat Enhancement Priorities
4) District Fertilization Program.

Issues

1) Backlog

- Many high priority Brushing activities not completed in 2001 fiscal. Problem associated with not getting Pesticide use Permits. Problem to be resolved by completing surveys and submitting PUP applications at an earlier date.
- Surveys not always consistent with the District backlog NSR policy. District Backlog NSR policy given as a hand out at June 19, 2001 RMP Meeting.

2) Enhanced

- Priority relating to second lift pruning required clarification. Issue resolved through July 11, 2001 Amendment to 1998 RMP allowing for 2nd lift pruning to have a higher priority assigned than 1st lift pruning or Juvenile spacing.
- Fertilization priorities unclear. Clarified during June 19, 2001 RMP meeting. Age class 3 and 4 Fd dominated stands assigned a higher priority than age class 1 and 2 Fd dominated stands.
- Decision as to location of 2003 and 2004 Fertilization programs required. Decision made at June 19, 2001 RMP meeting.
- Priorities associated with individual activities are rated using the District Specific Guidelines.

3) Habitat Enhancement

- 1998 Type 1 Silvilculture Strategy did not rank habitat enhancement as a priority. Based on discussion at June 19, 2001 RMP meeting it was decided to partition a percentage of the district SH allocation for habitat enhancement. Issue resolved through July 11, 2001 RMP amendment allowing for 5 % of the SH allocation to be delivered as habitat enhancement. Goal is to deliver 10 ha of Riparian habitat enhancement and 40 ha of non Riparian habitat enhancement. It was decided that the 40 ha of non Riparian work would be related to enhancing spotted Owl habitat in recruitment areas.

All other aspects of the Resource Management Plan (RMP) are as stated in the 1998 Type 1 Silviculture Strategy located at http://www.for.gov.bc.ca/hfp/silstrat/map/vancouver-tsa-fraser.htm

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at
http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** Chilliwack Forest District SUM TSAs & TFLs

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

Chilliwack Forest District SUM TSAs & TFLs
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	3950	4150	4150	4150	3150	30.89	122000	
Spacing	473	560	620	650	650	1099.37	520000	
Pruning	453	442	423	460	460	1273.73	577000	
Fertilizing	1800	1500	1800	1500	1500	300.00	540000	
Other	0	0	0	0	0	0.00	0	
Totals hectares	6676	6652	6993	6760	5760	263.48	1,759,000	
Planning and prescriptions	2200	2200	2200	2200	1000		71,000	
Total dollars							1,830,000	
Forest Health Enhancement								
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	10	10	10	10	10	2,999.70	30000	
Non-riparian treatments	40	40	40	40	40	1,499.96	60000	
Totals hectares	50	50	50	50	50	1,799.93	90,000	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	3950	4150	4150	4150	3150	30.89	122,000	
Spacing	473	560	620	650	650	1,099.36	520,000	
Pruning	453	442	423	460	460	1,273.73	577,000	
Fertilizing	1800	1,500	1,800	1,500	1,500	300.00	540,000	
Other stand tending activities	50	50	50	50	50	1,799.78	90000	
Totals hectares	6726	6652	6993	6760	5760	274.90	1,849,000	
Planning and prescriptions							71,000	
Studies funding							0	
Total dollars							1,920,000	

1/4/2006

Fraser TSA
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	3800	4000	4000	4000	3000	30.00	114000	1
Spacing	450	500	600	600	600	1100.00	495000	2
Pruning	416	350	400	400	400	1300.00	540000	3
Fertilizing	1500	1500	1500	1500	1500	300.00	450000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	6166	6350	6500	6500	5500	259.33	1,599,000	
Planning and prescriptions	2200	2200	2200	2200	1000	$30	66,000	1
Total dollars							1,665,000	
Forest Health Enhancement								
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	10	10	10	10	10	3,000.00	30000	1
Non-riparian treatments	40	40	40	40	40	1,500.00	60000	1
Totals hectares	50	50	50	50	50	1,800.00	90,000	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	3800	4000	4000	4000	3000	25.00	114,000	
Spacing	450	500	600	600	600	1,100.00	495,000	
Pruning	416	350	400	400	400	1,300.00	540,000	
Fertilizing	1500	1,500	1,500	1,500	1,500	300.00	450,000	
Other stand tending activities	50	50	50	50	50	1,799.89	90000	
Totals hectares	6216	6350	6500	6500	5500	271.72	1,689,000	
Planning and prescriptions							66,000	
Studies funding							0	
Total dollars							1,755,000	

Mission TFL 26
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	150	150	150	150	150	53.33	8000	1
Spacing	23	60	20	50	50	1086.96	25000	1
Pruning	37	92	23	60	60	1000.00	37000	2
Fertilizing	300	0	300	0	0	300.00	90000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	510	302	493	260	260	313.72	160,000	
Planning and prescriptions							5,000	1
Total dollars							165,000	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	150	150	150	150	150	53.33	8,000	
Spacing	23	60	20	50	50	1,086.91	25,000	
Pruning	37	92	23	60	60	999.97	37,000	
Fertilizing	300	0	300	0	0	300.00	90,000	
Other stand tending activities	0	0	0	0	0	0.00	0	
Totals hectares	510	302	493	260	260	313.72	160,000	
Planning and prescriptions							5,000	
Studies funding							0	
Total dollars							165,000	

1/4/2006

Chilliwack Forest District SUM TSAs & TFLs
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	76	39	69	32	84	30.16	2280	
Site preparation	0	0	0	0	0	0.00	0	
Planting	6	0	0	0	0	999.83	6000	
Brushing	22	21	10	0	0	1,935.10	41800	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	103	61	79	32	84	485.24	50,080	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							50,080	
Backlog Reforestation								
Surveys	29	12	8	0	0	30.00	870	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	29	12	8	0	0	29.99	870	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							870	
Impeded areas								
Surveys	795	500	500	250	129	30.00	23850	
Brushing	2	0	0	0	0	799.60	1600	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	797	500	500	250	129	31.93	25,450	
Prescriptions and planning dollars							0	
Total impeded areas							25,450	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	900	551	577	282	213	30.01	27000	
Site preparation	0	0	0	0	0	0.00	0	
Planting	6	0	0	0	0	999.17	6000	
Brushing	24	21	10	0	0	1,838.75	43400	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	929	573	587	282	213	82.22	76400	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							76,400	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

1/4/2006

Fraser TSA
Backlog Program Table
For the 2002/03 Fiscal Year

Activities

Legal Obligations

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	76	39	69	32	84	30.00	2280	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	6	0	0	0	0	1,000.00	6000	1
Brushing	22	21	10	0	0	600.00	41800	1
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	103	61	79	32	84	485.26	50,080	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							50,080	

Backlog Reforestation

(Planned activities where there is no BSP)

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	29	12	8	0	0	30.00	870	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	1
Totals hectares	29	12	8	0	0	30.00	870	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							870	

Impeded areas

(stocked areas where BSP not required)

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	795	500	500	250	129	30.00	23850	2
Brushing	2	0	0	0	0	800.00	1600	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	797	500	500	250	129	31.93	25,450	
Prescriptions and planning dollars							0	
Total impeded areas							25,450	

Site Restoration

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	

Backlog Program Activities - Management Unit Total

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	900	551	577	282	213	30.01	27000	
Site preparation	0	0	0	0	0	0.00	0	
Planting	6	0	0	0	0	999.50	6000	
Brushing	24	21	10	0	0	1,838.98	43400	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	929	573	587	282	213	82.22	76400	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							76,400	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

1/4/2006

Mission TFL 26
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							0	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Chilliwack Forest District SUM TSAs & TFLs
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.

The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

Potential volume/ha gain (m3/ha/yr) provincial factors:

0.77	0	0	0	2.9	0.41	0.25	0	0.46

Years the factor will affect:

0	65	65	65	65	65	65	65	65

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

Provincial factors for estimated value gain at harvest

Space	Prune	Fertilize
5-15%	15-30%	1-5%

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

Est. short term employment rate (person days/ha) provincial factors:

0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys

Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

Area		
Tree Improvement	Nursery Seedling Production	Silviculture Surveys

A Tree Improvement
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003
Backlog area planted from backlog table 6
Enter area of all other sites planted with improved trees
Total area affected by tree improvement 6

B Nursery production of seedlings
Enter sowing requests from SPAR

C Silviculture surveys
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.
These potentially provide improved estimates of site productivity and operational yield adjustment factors
Total EFP surveys from the EFP table 3,950
Total backlog surveys from the backlog table. 900
33% of all silviculture surveys 1,600

Optionally, you may provide a more exact estimate:
Estimate area of regen delay surveys
Estimate area of free growing surveys
Estimate area of pre-stand tending surveys
Estimate of total surveys that will affect timber supply (A) 0

Surveyed area that will affect timber supply 1,600
Replace with (A) if a more exact estimate is calculated

Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR)
Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003

Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas)
Estimate area that will be classified as free growing after a survey in 2002/2003

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity.

Chilliwack Forest District SUM TSAs & TFLs
Performance Measures Based on Activities Planned for 2002/2003
Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	6	0	1,600	0	6	24	473	453	1,800	4,412	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	1,148	629	7,686	0	54,000		63,463
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	1	0	160	0	12	62	1,873	2,057	324	441	
3.3	Estimated total full time equivalent positions (FTE)	0	0	1	0	0	0	10	11	2	2	27
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											50
5.3	Est. area with secondary value provided to biodiversity (ha)											0

Chilliwack Forest District SUM TSAs & TFLs
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	6,726	6,652	6,993	6,760	5,760	275	1,849,000
Planning, prescriptions and seedlings							71,000
Backlog Program Field Activities	929	573	587	282	213	82	76,400
Planning, prescriptions and seedlings							0
Totals	7,655	7,224	7,580	7,042	5,973		1,996,400

Performance Measures	
Potential total merchentable volume increment in 65 years	63,463 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	27 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	50 ha
Estimated area with secondary value provided to biodiversity	0 ha

BRITISH COLUMBIA
Ministry of Forests
Chilliwack Forest District

MEMORANDUM

File: 22210-01/EF

July 11, 2001

To: Larry Sigurdson
Stand Tending Forester
Vancouver Forest Region

Re: Resource Management Plan Amendment

The Chilliwack Forest District wishes to amend the current Resource Management Plan, Fraser TSA Silviculture Strategy Version 1.1, completed in 1998.

The amendment shall read as follows:

1) Allow for approximately 5% of Fraser TSA Sustainable Harvest (SH) allocations to be used for habitat supply and biodiversity enhancement.

Goals

- Riparian Enhancement or Grizzly Bear enhancement / 10 ha per year
- Non-Riparian Enhancement (specifically Spotted Owl Habitat Enhancement) / 40 ha per year
- Spotted Owl Enhancement will be concentrated in areas designated as recruitment under Spotted Owl Resource Management Plans

2) Allow for the proportioning of Sustainable Harvest priorities. A component of all activities may be completed in any individual year. Higher priority items such as Fertilization, and Backlog generally to be allocated a higher proportion of funding while still allowing some level of lower priority activities.

3) Second Lift Pruning to be assigned a higher priority than Juvenile Spacing and First Lift Pruning. This is to ensure previous investments are not lost.

• THE GOVERNMENT OF BRITISH COLUMBIA IS AN "EMPLOYMENT EQUITY EMPLOYER" •

Revised Tables shall read:

Activity	**Priority**
Backlog	1
Fertilization	2
2nd Lift Pruning	3
Juvenile Spacing	4
1st Lift Pruning	5
Stand Conversion	6
Owl Enhancement	Not ranked*

*This activity is allocated a proportion of funding as indicated

This amendment will form an integral part of the Vancouver Forest Region Enhancement Forestry Resource Management Plan from the Fraser TSA.

Amendment is based on the RMP Meeting held June 19, 2001 at the Chilliwack District Office.

Craig Wickland
Silviculture Forester
Chilliwack Forest District

pc: Bob Peever, Cattermole Timber

John Pezel, Western Forest Products Ltd.

John Guillemaud, Canadian Forest Products Ltd.

Rick Pasutto, for Teal Cedar Products Ltd.

Gary Aitken, Teal Cedar Products Ltd.

Kim Allan, RPF, District of Mission

Kevin Chisholm, RPF, International Forest Products Ltd.

Mike Younie, Ministry of Water, Land & Air Protection

Bill Jex, Ministry of Water, Land & Air Protection

Fraser TSA
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.34	0	0.25	0	1.9	0.25	0	0	0.40	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	
Provincial factors for estimated value gain at harvest							5-15%	15-30%	1-5%	
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area: Tree Improvement	Area: Nursery Seedling Production	Area: Silviculture Surveys
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	6		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	6		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			3,800
Total backlog surveys from the backlog table.			900
33% of all silviculture surveys			1,551
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply (A)			0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			1,551
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity. ☐

Fraser TSA
Performance Measures Based on Activities Planned for 2002/2003
Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	6	0	1,551	0	6	24	450	416	1,500	4,002	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.40		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	1,147	629	7,313	0	39,000		48,089
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	1	0	155	0	12	62	1,782	1,889	270	400	
3.3	Estimated total full time equivalent positions (FTE)	0	0	1	0	0	0	10	10	2	2	25
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											50
5.3	Est. area with secondary value provided to biodiversity (ha)											0

Fraser TSA
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	6,216	6,350	6,500	6,500	5,500	272	1,689,000
Planning, prescriptions and seedlings							66,000
Backlog Program Field Activities	929	573	587	282	213	82	76,400
Planning, prescriptions and seedlings							0
Totals	7,145	6,923	7,087	6,782	5,713		1,831,400

Performance Measures

Potential total merchentable volume increment in 65 years	48,089 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	25 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	50 ha
Estimated area with secondary value provided to biodiversity	0 ha

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): Fraser TSA

Stand Tending	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)**
Surveys	2159	3800	76.0	2	1	33	30	-9.1	More surveys required to get a year ahead for the fertilization planning. A high % of surveys are for fertilization reconaissance
Spacing	633	500	-21.0	2	2	1980	1100	-44.4	Fewer ha' s suitable for spacing than anticipated. RMP tables based on ISIS projections. ISIS may not be totally current
Pruning	420	350	-16.7	2	3	2420	1300	-46.3	Fewer ha's spaced than anticipated. Surveys show fewer suitable stands than previously anticipated due to fewer 1st lift pruning
Fertilizing	1500	1500	0.0	1	1	330	300	-9.1	
Forest Health	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)**
Spacing	0	0	#DIV/0!	0	0	1980	n/a	#VALUE!	
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Habitat Supply/ Biodiversity									
Riparian	0	10	#DIV/0!	0	0	3000	3000	0.0	Not priorized last year. This year priorized based on estimated 5 % of SH funding for both Riparian and non riparian enhancement
Non-Riparian	0	40	#DIV/0!	0	0	3000	1500	-50.0	Not priorized last year. This year priorized based on objectives determined at RMP meeting June 19, 2001

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): **Fraser TSA**

	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Legal Obligation									
Surveys	40	76	90	1	1	33	30	-9.1	More brushing surveys required than anticipated as a number of brushing treatments not completed during fiscal 2001.
Site preparation	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	6	#DIV/0!	1	1	1320	1000	-24.2	BSP activities started a year late
Brushing	26	22	-15.4	1	1	1155	600	-48.1	Surveys showed not all brushing is required.
B/L Reforestation									
Surveys	373	29	-92.2	0	0	33	30	-9.1	Most backlog surveys completed. Free growing surveys now shown under Impeded.
Site Prep	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	BSPs not prepared for all areas originally proposed for planting as per Backlog NSR policy
Planting	7	n/a	#VALUE!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Impeded									
Surveys	0	795	#DIV/0!	0	0	33	30	-9.1	Free growing surveys included under backlog in 2001 RMP table. Area determined from ISIS report.
brushing	0	2	#DIV/0!	0	0	1155	800	-30.7	Area not brushed in 2001.
Site Resoration									
Fill planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Rehab	0	0	#DIV/0!	0	0	2200	n/a	#VALUE!	
Reforestation	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	

Agency: **Ministry of Forests**
TFL:
TSA: **Fraser**

Communication Log for the Sustainable Harvest Objective 2002-2003

(also include community/stakeholder meetings to review silviculture strategies and SH plans)

Date	***Name (person contacted)***	***Representing***	***Communication Method***	***Comments/Issues***
5/29/2001	RMP planning group	Licencees /MELP	letter	Letter send to RMP planning group regarding proposed RMP meeting
5/29/2001	Kevin Chisholm	Interfor	e-mail	E-mail from Kevin Chisholm regarding June 19 RMP meeting Response to agenda items. Kevin can not attend meeting Kevin would like to see incremental silviculture included within spotted owl areas for habitat enhancement. Kevin would like to see the Hope area targeted for 2003 fertilization.
5/31/2001	Mike Younie	MELP	meeting	Meeting to discuss habitat enhancement sections of RMP Mike would like to see more emphasis placed on Habitat enhancement. Specifically enhancement relating to deer winter range.
6/19/2001	RMP planning group	Licencees/MELP	RMP meeting	Discussion relating to RMP priorities. Habitat enhancement goals established. Fertilization areas for next 2 years established Typed minutes sent to RMP planning group.
6/28/2001	Mike Younie	MELP	e-mail	e-mail from Mike Younie regarding Riparian and non Riparian costs
7/12/2001	RMP planning group	Licencees/ MELP	Letter	Proposed amendment ro RMP sent to licencees Fraser TSA Backlog and Enhanced tables sent to licencees

Mission TFL 26
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on TFL 26 Type 1 Silviculture Strategy and Provincial Factors

The following default provincial factors may be replaced by mcnagement unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.34	0	0.25	0	1.9	0.25	0	0	0.40	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Provincial factors for estimated value gain at harvest							5-15%	15-30%	1-5%	

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	**Nursery Seedling Production**	**Silviculture Surveys**
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	0		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	0		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			150
Total backlog surveys from the backlog table.			0
33% of all silviculture surveys			50
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			0
Estimate area of free growing surveys			0
Estimate area of pre-stand tending surveys			150
Estimate of total surveys that will affect timber supply			(A) 150
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			150

Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR)
Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003

Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas)
Estimate area that will be classified as free growing after a survey in 2002/2003

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity.

Mission TFL 26
Performance Measures Based on Activities Planned for 2002/2003
Based on TFL 26 Type 1 Silviculture Strategy and Provincial Factors

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	0	0	150	0	0	0	23	37	300	510	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.40		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	1	0	374	0	7,800		8,175
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	0	0	15	0	0	0	91	168	54	51	
3.3	Estimated total full time equivalent positions (FTE)	0	0	0	0	0	0	1	1	0	0	2
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											0
5.3	Est. area with secondary value provided to biodiversity (ha)											0

Mission TFL 26
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	510	302	493	260	260	314	160,000
Planning, prescriptions and seedlings							5,000
Backlog Program Field Activities	0	0	0	0	0	0	0
Planning, prescriptions and seedlings							0
Totals	510	302	493	260	260		165,000

Performance Measures

Potential total merchantable volume increment in 65 years	8,175 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	2 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	0 ha
Estimated area with secondary value provided to biodiversity	0 ha

DISTRICT OF MISSION
MISSION MUNICIPAL FOREST

THE FUTURE - OUR MISSION

Type 1 Incremental Silviculture Strategy

-TREE FARM LICENCE #26 -

Submitted to the B.C. Ministry of Forests

March, 2001

Prepared with assistance from:

Forest Ecosystem Solutions Ltd.
#210 - 275 Fell Avenue, North Vancouver, B.C.
V7P 3R5

1 Executive Summary

1.1 *General Strategy*

The emphasis of the silviculture strategy for District of Mission's TFL 26 is to maximize the quality of their timber supply subject to available funding and market conditions for forest products. Mission also wishes to increase the available harvest through incremental silviculture and other investments.

1.2 *Working Targets*

1.2.1.1 WT 1 (Quantity)

Manage short and mid-term timber supplies to yield a 4.5% increase in harvest level from 43,000 m^3 per year to 45,000 m^3 per year.

1.2.1.2 WT 2 (Quality)

Manage regenerated stands to yield 10% premium logs by volume, with the majority of the remainder being of sawlog quality.

1.3 *Product Objectives*

Premium Log

1.	Douglas fir, clear, pruned	45+ cm min dbh, pruned 5.3 m log.
2.	Douglas fir, large timber	45+ cm min dbh, unpruned.
3.	Hem/Bal, large timber	45+ cm min dbh, unpruned.
4.	Cedar, large timber	45+ cm min dbh, unpruned.

Sawlog

1. Minimum average stand dbh of 30 cm.
2. Minimum stand volume of 350 m^3 per hectare.

1.4 *Major Silviculture Strategies*

1.4.1 Timber Supply – Quality (H)

1. Increase the piece size and the clear wood component of timber supply through a combination of density control, pruning and fertilization.

1.4.2 Timber Supply – Quantity (H)

1. Increase the timber supply in the short-term by fertilizing existing stands that are scheduled for harvesting within the next 20 years.
2. Increase the timber supply in the mid term by repeat fertilizing existing stands that are scheduled for harvesting 20 to 80 years from now.
3. Increase THLB by converting some of the deciduous stands, which are not currently utilized, to conifer.
4. Minimize the impact of green-up and VQO on timber supply through quick planting using large stock types and early brushing.
5. Minimize the impact of green-up and VQO on timber supply using commercial thinning and retention harvesting.
6. Increase the timber supply using genetically improved seed.
7. Determine true site indices for the TFL.

1.4.3 Biodiversity

1. Create old growth conditions through partial harvesting within riparian areas where feasible.

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2 Introduction

This strategy is part of a province-wide initiative to develop a silviculture strategy for each management unit in the province by March 31, 2001. These strategies are limited to FRBC funded silviculture activities, i.e., incremental silviculture.

Incremental silviculture forms a part of many possible strategies that are available today to improve future quality and quantity of habitat and timber supply. This document broadly analyzes a range of potential incremental silviculture activities to form a basis for an incremental silviculture strategy.

This analysis is a type 1 analysis using existing timber supply review (TSR) summary information to identify issues and opportunities for silviculture investments. It provides realistic targets, strategies and silviculture regimes that can be used to guide investments, and further as inputs in the more in-depth type 2 analyses.

It is important not to confuse this initiative with timber supply review (TSR). TSR determines harvest levels that can be supported with current management practices and information. Incremental silviculture strategy assesses the impact of a variety of potential investments on the future quality and quantity of harvest levels as well as habitat supply.

2.1 Methodology

The following process was used to prepare this strategy:

1. A working session was held February 21, 2001 in Mission, attended by representatives of District of Mission (Mission) and Ministry of Forests (MoF). Antti Makitalo from Forest Ecosystem Solutions Ltd. led the session. The participants brought up issues, opportunities and priorities that are listed later in this document.
2. Forest Ecosystem Solutions Ltd. incorporated the results of the working session into the draft document and added forecasts of future harvest quantity and quality and of job outcomes.
3. After stakeholder review, Forest Ecosystem Solutions Ltd. submitted the completed strategy to the MoF.

2.2 Acknowledgements

The participation of the following organizations at the working session is acknowledged:

Kim Allan	District of Mission
Craig Wickland	Ministry of Forests, Chilliwack Forest District

Larry Sigurdson	Ministry of Forests, Vancouver Forest Region

The project was managed by Kim Allan. Funding was provided by Forest Renewal BC.

3 Higher Level Goals and Objectives

This incremental silviculture strategy is based on higher level provincial goals and objectives, which are as follows:

3.1 Provincial Goals

Government's goals are (Atherton, 1999):

1. Sustainable Use
2. Community Stability
3. A strong Forest Sector

3.1.1 Provincial Objectives

3.1.1.1 Guiding Principles

1. Minimize risk and maintain options.
2. BC's forests are important from the local to global levels and should be managed in this context.
3. Each generation has a moral obligation to preserve the province's forest resources for future generations.

The Provincial Incremental Silviculture Strategy specifies a working target of increasing volume and maintaining or enhancing future premium wood quality supplies. More specific objectives are to:

1. Minimize interim reduction in timber supply so that the allowable annual cut is not less than 65 million cubic meters;
2. Increase timber supply over the mid-term to a long-term level of 75 million m^3; and,
3. Maintain the production of premium quality logs at or above 10% of total harvest. (Atherton, 1999)

3.2 Regional Objectives

The objectives of the regional incremental silviculture strategy are to:

1. Ensure a long term sustainable harvest which approximates the current harvest value and volume levels and that produces a diversified mix of products necessary to create and maintain sustainable forest employment.

2. Balance treatments that enhance growth and yield such as fertilizing, spacing and forest health activities with those that increase the value of the wood such as pruning.

3. Utilize incremental silviculture treatments to contribute to sustainable management of non-timber values at the landscape level. (MoF, 1998)

4 Issues and Strategies

4.1 Identification of Issues and Strategies

4.1.1 Issue 1: Timber Supply – Quality (H)

Mission wishes to maximize the quality of their timber supply subject to available funding and market conditions for forest products. Forest product prices have a direct impact on Mission's ability to invest in incremental silviculture.

Strategies:

1. Increase the piece size and the clear wood component of timber supply through a combination of density control, pruning and fertilization.

4.1.2 Issue 2: Timber Supply – Quantity (H)

Mission also wishes to increase the available harvest volume through incremental silviculture and other investments. There are opportunities to mitigate the timber supply impacts of current green-up and visual quality rules using silviculture. Also, several silviculture regimes are available to increase the yields of existing and regenerated stands.

The issue of site indices and their accuracy, although not a silviculture matter, deserves further investigation. If the current site indices are underestimated, as has been the case throughout the province, the impact on timber supply can be significant. The costs of determining the correct site indices are likely to be moderate compared to the benefits through increased timber supply.

Strategies:

1. Increase the timber supply in the short-term by fertilizing existing stands that are scheduled for harvesting within the next 20 years. Mission has recently completed a fertilization assessment giving direction in choosing the proper stands for fertilization.

2. Increase the timber supply in the mid term by repeat fertilizing existing stands that are scheduled for harvesting 20 to 80 years from now.

3. Increase THLB by converting some of the deciduous stands that are not currently utilized to conifer.

4. Minimize the impact of green-up and VQO on timber supply through quick planting using large stock types and early brushing. This is a basic silviculture activity and it is already practiced on the TFL.

5. Minimize the impact of green-up and VQO on timber supply using commercial thinning and retention harvesting.

6. Increase the timber supply using genetically improved seed. Genetically improved seed has not always been available for Mission. The next generation genetically improved seed is predicted to be available by 2010.

7. Determine true site indices for the TFL.

4.1.3 Issue 3: Biodiversity

Maintain or create old growth seral conditions.

Strategy:

1. Create old growth conditions through partial harvesting within riparian areas where feasible.

4.1.4 Issue 4: Forest Health

Forest health problems in the TFL are not significant. There are some mistletoe infected Hw stands and endemic level of root rot.

Some hemlock looper is present adjacent to the TFL.

Strategy:

1. Remove infected Hw trees promptly.

5 Product Objectives

The following are products objectives used for this analysis:

Premium Log

Douglas fir, clear, pruned	45+ cm min dbh, pruned 5.3 m log.
Douglas fir, large timber	45+ cm min dbh, unpruned.
Hem/Bal, large timber	45+ cm min dbh, unpruned.
Cedar, large timber	45+ cm min dbh, unpruned.

Sawlog

Minimum average stand dbh of 30 cm. Minimum stand volume of 350 m^3 per hectare.

6 Potential Treatments and Treatable Area

Table 1 – Potential Treatments and Treatment Area

Treatment	Comment	Treatable Area
◆ Spacing	Spacing can be used to control species composition. Density management can affect sizes and average diameters of stands at harvest. Spacing is usually a prerequisite for pruning, unless densities are sufficiently low that no spacing is required.	Approximately 80% of harvested area (51ha) is spaced.
◆ Commercial Thinning	Little commercial thinning is practiced in the TFL. It has a role in visually sensitive areas.	5 ha per year.
◆ Pruning	Pruning is done only on good and medium fir sites. Two lifts is the normal practice.	16 ha per lift, total of 32 ha per year.
◆ Fertilization	Currently there is little fertilization, however, the potential is significant.	40 ha of existing stands, 7.5 ha of stands scheduled for harvest 20-80 years from now, 11 ha out of all harvested areas for a total of 58.5 ha/yr

7 Potential Strategies by Response Time Frame

Tables 2 and 3 identify potential strategies and their estimated results by time frame; short-term= 0-20 years, mid term = 21-80 years, long term = 81+ years.

Table 2 - Potential strategies by time frame to improve the quality of timber supply

Response Time Frame	Objective/Action	Anticipated Results
Short Term	None	
Mid Term	1. Prune in 2 lifts to yield a 5.3 m clear log. Fd good and medium sites only at less than 600 m elevation. There are about 1,900 ha of good and medium Fd sites < 600 m in the TFL. This is 25% of the THLB. Assume 25% harvest on good and medium Fd sites, i.e., 25% x 65 ha = 16 ha x 2 lifts = 32 ha of potential pruning per year.	Assume 15% clear wood from pruning (MoF, 2000). If 25% of harvest areas are pruned = 25% x 15% = 3.75% clear wood.
	2. Manage for large dimension timber through spacing and prepare stands for fertilization and pruning. Timber supply analysis assumes spacing of all good and medium Fd, Cw and HemBal sites. Grand total of 6,358 ha. This is about 88 % of the THLB. In practice about 10% of this does not require spacing. Assume 88% -10% = 78% of annual harvest area is spaced annually, 78% x 65ha = 51 ha.	Spaced stands produce larger diameters. According to TIPSY, the spaced stands will produce on average 5.5% larger average diameters for the largest 250 stems.
Long Term	As above.	

Table 3 - Potential strategies by time frame to improve the quantity of timber supply

Response Time Frame	Objective/Action	Anticipated Results
Short Term	1. Achieve green-up asap in VQO zones by: a. Planting promptly after harvesting. b. Planting large stock. c. Early brushing.	Current practice.
	2. Fertilize suitable existing stands 10 years prior to harvest. Harvesting within the next 20 years.	Approximately 800 ha of age class 3, 4 and 5 stands have been identified suitable for fertilization. 800 ha constitute about 60% of the area harvested in 20 years. Potential treatment area per year = 800 ha/20years = 40 ha/yr. Assuming 5% volume gain from fertilization: 60 % X 5% = 3% increase timber in supply.
	3. Convert 200 ha of deciduous stands in coniferous stands.	+ 4%, area multiplied by 10 m^3/ha/year.
	4. CT and partial harvesting in visually sensitive areas.	Modelling required to estimate impact.
	5. Complete site index estimation studies. The impact will be realized throughout the planning horizon.	20% increase in timber supply as per sensitivity analysis; however, studies may prove neutral.
Mid Term	6. Repeat fertilize all suitable existing stands scheduled for harvest 20 to 80 years from now to raise existing stand volumes.	Approximately 450 ha of age class 1 and 2 stands have been identified suitable for fertilization. 450 ha constitute about 10% of the area harvested within the next 60 years. Potential treatment area per year = 450ha/60years = 7.5 ha/yr. Assuming 10% volume gain from repeated fertilization: 10% X 10% = 1% increase in timber supply.
	7. Increase Regenerated stand volumes by repeat fertilizing suitable Fd stands.	Approximately 1,200 ha (17%) are suitable stands in the TFL of the long-term THLB of 7,200 ha. Assume fertilization for 17% of all harvested areas, 17% of annual harvest area of 65 ha = 11 ha. Assume 30% increase in volume, 30% X 17% = 5% impact.
Long Term	8. Increase Regenerated stand volumes by using second generation genetically improved seed.	Second generation seed should be available for 2010. Assuming an average of 10% genetic gain for all species would result in 10% increase in long-term timber supply.
	9. Increase Regenerated stand volumes by repeat fertilizing suitable Fd stands.	Approximately 1,200 ha (17%) of suitable sites in the TFL out of long-term THLB of 7,200 ha. Assume fertilization for 17% of all harvested areas, 17% of annual harvest area of 65 ha = 11 ha. Assume 30% increase in volume, 30% X 17% = 5% impact.

8 Incremental Silviculture Strategy

This section synthesizes the preceding background information and analysis into an incremental silviculture strategy for the TSA.

8.1 *General Strategy*

The Mission TFL has several options to utilize silviculture to improve both the quality and quantity of their timber supply. Pruning and spacing treatments combined with fertilization can bring quality improvements. Fertilization and genetic improvement will also be important tools to increase future harvest volumes.

8.2 *Working Targets*

8.2.1 WT 1 (Quantity)

Manage short and mid-term timber supplies to yield a 4.5% increase in harvest level from 43,000 m^3 per year to 45,000 m^3 per year.

8.2.2 WT 2 (Quality)

Manage regenerated stands to yield 10% premium logs by volume, with the majority of the remainder being of sawlog quality.

8.3 *Identification of Targets, Regimes and Activities*

Table 4 documents the issues and strategies identified earlier in section 1.1.

Note that fertilization treatment areas are quoted as ha per year. In practice, it is more efficient and cost effective to concentrate fertilization areas and carry out the treatment once in 5 to 7 years, rather than annually. In this strategy, a total of 58.5 ha per year of fertilization is recommended. It will be up to Mission how they choose to aggregate their fertilization areas. In section 8 - Silviculture Program – it is assumed that 50% (292.5 ha) of the 10 year fertilization program takes place in year 3 and another 50% between years 6 and 10.

Table 4 - Silviculture Strategies

Issue	Objective	Strategy	Target	Regime	Activities	Area ha/yr	Timber Supply Effects				Habitat Effects	Jobs pd/ha	Cost/ha	Rank	Impact on premium sawlog prod	AAC
							S	M	L	Q						
Quality of Timber Supply	Max Quality	Increase piece size and clear wood.	Medium and high fir sites at less than 600 m elevation.	Density control and pruning.	1. Space to 600 – 800 sph.	5						3.5	1,000			
					2. Prune 350 sph 1st lift.	5				+		4	1,000	1	+	0
					3. Prune 300 sph 2nd lift.	5						5	1,400			
		Increase piece size and clear wood.	As per fertilization assessment.	Add fertilization to the previous regime.	1. Space to 600 – 800 sph.	11						3.5	1000			
					2. Prune 350 sph 1st lift.	11						4	1000			
					3. Fertilize 200 kg pure N/ha.	11		+	+	+		0.1	300	1	++	+
					4. Prune 300 sph 2nd lift.	11						5	1,400			
		Increase piece size.	All good and medium Fd, Cw and HemBal sites.	Density control.	Space to 600 – 800 sph.	35				+		3.5	1,000	1	+	0
Quantity of Timber Supply	Max Quantity	Increase volume per hectare in the short term.	Existing stands scheduled for harvesting within the next 20 years as per fertilization assessment.	Fertilize once 10 years prior to harvest.	Fertilize suitable stands.	40	+					0.1	300	2		+
		Increase volume per hectare in the mid term.	Existing stands scheduled for harvesting 20 to 80 years from now as per fertilization assessment.	Repeat fertilize starting at 15 to 20 years of age (or at pruning) until 10 years prior to harvest.		7.5		+	+	+		0.1	300	3		+

Issue	Objective	Strategy	Target	Regime	Activities	Area ha/yr	Timber Supply Effects				Habitat Effects	Jobs pd/ha	Cost/ha	Rank	Impact on premium sawlog prod	AAC
							S	M	L	Q						
		Minimize the impact of green-up and VQOs on timber supply.	Visually sensitive areas.	Quick planting, large stock, early brushing. Basic silviculture.	1. Plant	65						2	1,100			0
					2. Brush	85						1.5	450			
		Minimize the impact of green-up and VQOs on timber supply.	Visually sensitive areas.	Commercial thinning, retention harvesting.		5	+								+	
		Increase THLB.	Deciduous stands.	Convert a grand total of 200 ha of deciduous stands to conifer.	1. Harvest	5										
					2. Plant	5						2	2			
					3. Brush	5	+	+	+			1.5	450			+
					4. Space	5						3.5	1,000			
		Increase regenerated yields.	Regenerated areas.	Use genetically improved seed. The 2nd generation seed likely not available until 2008.					+	+					+	+
		Determine true site indices in the TFL.	All analysis units.	Site index study.	Not incremental silviculture, however, potential impact and value significant.		+	+	+	+						+
Biodiversity	Enhance	Create old growth habitat conditions.	Riparian areas	Partial cutting in riparian areas where feasible.			+	+	+		+					+
Forest Health	Prevent and mitigate.	Reduce mistletoe infections..	Mistletoe infected Hw stands.	Remove infected trees												

9 Silviculture Program

9.1 *Tactical Priorities*

As table 4 illustrates, individual regimes were not ranked higher than others. Rather, the several groups received the same ranking indicating their overall high priority. Quality enhancing regimes ranked highest, but they all received the same rank.

The highest priority activities are the different combinations of spacing, pruning and fertilization. The second highest priority was given to the timber quantity enhancing activities of existing stand fertilization. It was considered less attractive to convert deciduous stands into coniferous stands and undertake a substantial commercial thinning program.

In reality funds for incremental silviculture are limited. If adequate resources do not exist to follow the regimes in table 4, the following order of priority will be used:

- ☐ Spacing;
- ☐ Fertilization;
- ☐ Prune 2nd lift (stands have been pruned for 1st lift);
- ☐ Prune 1st lift.

As the uncertainty regarding the accuracy of site indices in the TFL is not directly related to incremental silviculture it was not given a rank. However, a site index study is a high priority, should there be available funds.

9.2 *Program Costs and Benefits*

Table 5 contains the area treated by each activity and year.

Table 6 contains the expenditure by activity and year, based on the unit costs recorded in the treatment table.

Table 7 contains the silviculture employment benefits associated with the program.

The cost and employment assumptions used in creating the tables are listed in Appendix 2.

Planting and brushing in tables 5, 6 and 7 fall under the definition of basic silviculture and are thus not eligible for FRBC funding.

Table 5 - Area (ha) treated by activity and year

Year	Surveys	Site Prep	[1]Plant	[1]Brush	[1]Space	Fertilize	Prune	Total
1	200		70	90	56	0	32	448
2	200		70	90	56	0	32	448
3	200		70	90	56	292.5	32	740.5
4	200		70	90	56	0	32	448
5	200		70	90	56	0	32	448
Subtotal	1000		350	450	280	292.5	160	2532.5
Yr. 6-10	1000		350	450	280	292.5	160	2532.5
Total	2000		700	900	560	585	320	5065

[1] Planting, spacing and brushing areas include 5 ha from proposed deciduous conversion.

Table 6 - Expenditure by activity and year

Year	Surveys	Site Prep	Plant	Brush	Space	Fertilize	Prune	Total
1	$8,000		$77,000	$40,500	$56,000	$0	$38,400	$219,900
2	$8,000		$77,000	$40,500	$56,000	$0	$38,400	$219,900
3	$8,000		$77,000	$40,500	$56,000	$87,750	$38,400	$307,650
4	$8,000		$77,000	$40,500	$56,000	$0	$38,400	$219,900
5	$8,000		$77,000	$40,500	$56,000	$0	$38,400	$219,900
Subtotal	$40,000		$385,000	$202,500	$280,000	$87,750	$192,000	$1,187,250
Yr. 6-10	$40,000		$385,000	$202,500	$280,000	$87,750	$192,000	$1,187,250
Total	$80,000		$770,000	$405,000	$560,000	$175,500	$384,000	$2,374,500

Table 7 - Short-term employment benefits (person-days) by year and activity

Year	Surveys	Site Prep	Plant	Brush	Space	Fertilize	Prune	Total
1	20		140	135	196	0	144	635
2	20		140	135	196	0	144	635
3	20		140	135	196	29.25	144	664.25
4	20		140	135	196	0	144	635
5	20		140	135	196	0	144	635
Subtotal	100		700	675	980	29.25	720	3204.25
Yr. 6-10	100		700	675	980	29.25	720	3204.25
Total	200		1400	1350	1960	58.5	1440	6408.5

10 Appendix 1

10.1 *Timber Supply Context of Silviculture in TFL 26*

This section provides information on the timber supply history and dynamics within TFL 26. The objective is to identify the factors that shape timber supply within the TFL and identify opportunities for the use of silviculture to mitigate shortfalls in timber supply. Background information was drawn from Management Plan #8 draft (2001), Timber Supply Analysis Report (2001) and the Rationale for Allowable Annual Cut Determination (1996) for TFL 26.

10.2 *History of the Allowable Annual Cut*

TFL 26 was originally awarded as a Forest Management Licence to the Corporation of the District of Mission in 1958. The Allowable Annual Cut (AAC) was set at 12,035 m^3 in 1958 and increased over time to 41,200 m^3 by 1989 due to new inventory data, changes in utilization standards, additions to the TFL land base and a reclassification of site productivity. In 1996, the AAC was set at 45,000 m^3. This included a coniferous leading component of 42,000 m^3 and a partition of 3,000 m^3 attributable to deciduous leading stands

10.3 *Base Case Harvest Forecast*

Figure 1 shows the base case harvest forecast of the Timber Supply Analysis prepared for MP8. Figure 8 shows the base case harvest forecast for TFL 26. It suggests that a harvest level of 43,168 m^3 per year can be maintained for 9 decades following an increase up to 46,877 m^3 at 95 years and yet another increase at 155 years up to the long-term harvest level (LTHL) of 50,187 m^3.

The short-term harvest level of 43,168 m^3 in the base case is 4% higher than the current coniferous AAC, despite the smaller THLB (9.5%) compared to the last timber supply review. The current, less restrictive VQOs and changes in minimum harvestable ages since the last timber supply review account for most of this increase.

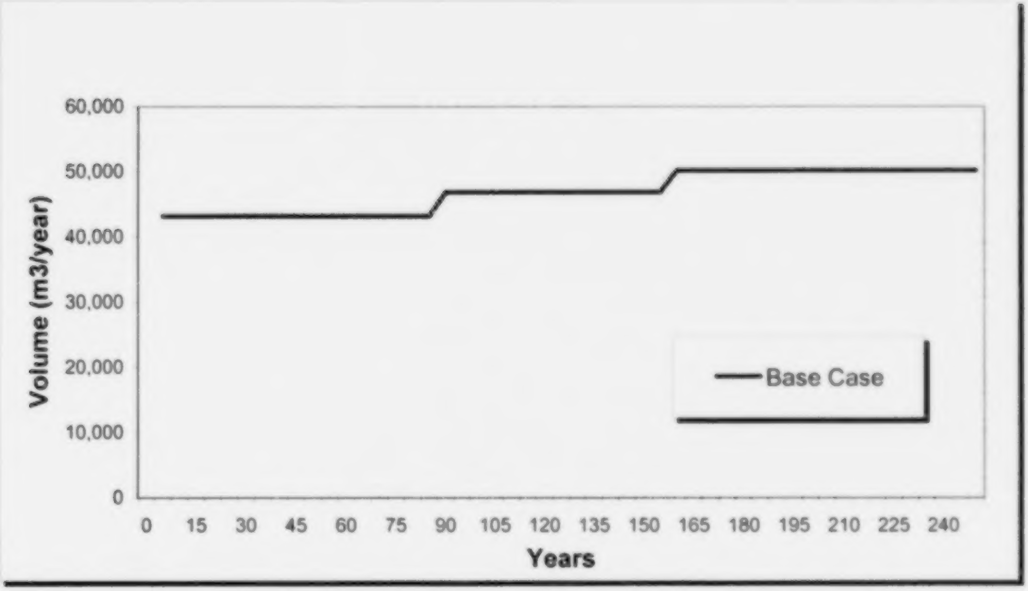

Figure 1 - Base case timber supply forecast

10.4 Alternative Timber Flows

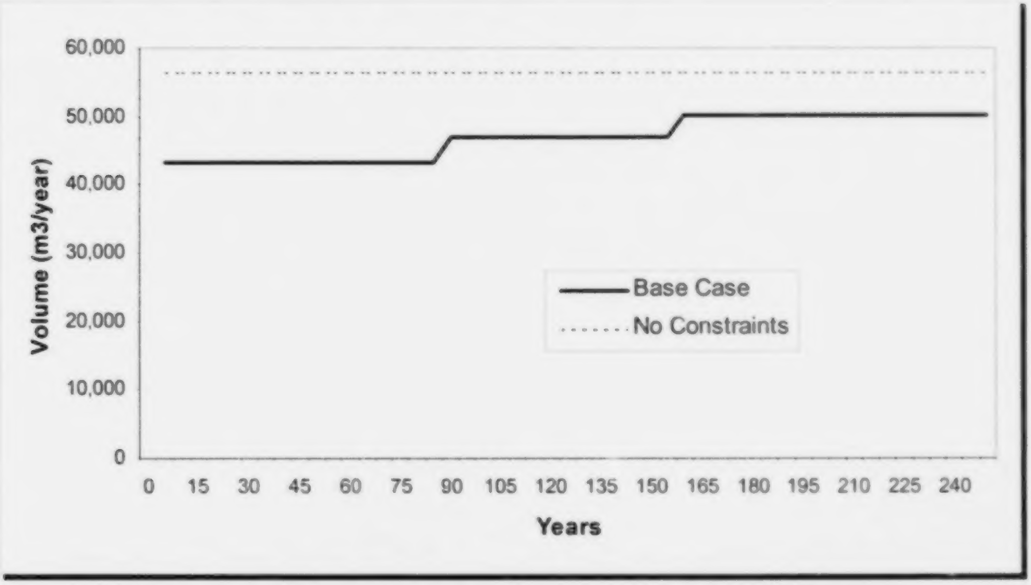

Figure 2 – Base Case and no land base constraints harvest forecast

Figure 2 shows the sustainable even-flow harvest level with no land base constraints. The harvest flow is 56,492 m^3, 31%, 21% and 13% higher than the base case short-, mid and long-term levels, respectively. The unconstrained scenario illustrates the maximum potential timber supply available from the THLB if there were no restrictions required.

10.5 Age Class Distribution

Figure 3 illustrates the current age class composition of the total Provincial Crown forested area and the THLB. Forested areas within the Crown land base outside the THLB may contribute to landscape seral stage targets but are not eligible for harvesting. Approximately 15% of the THLB is less than 20 years old and about 68% of the THLB is between 21 and 80 years old leaving 17% for stands older than 80 years. Only 1.45 % of the THLB is older than 250 years.

The forested stands outside of the THLB represent 26% percent of the total forested land base and are a significant factor in the availability of timber supply. Currently about 12% of the forested area outside of the THLB is older than 250 years and does not fulfill all of the old forest seral objectives. Therefore, some THLB may have to be recruited for old forest seral objectives, as there is relatively little non-THLB area in the 141-200 and 201-250 age class.

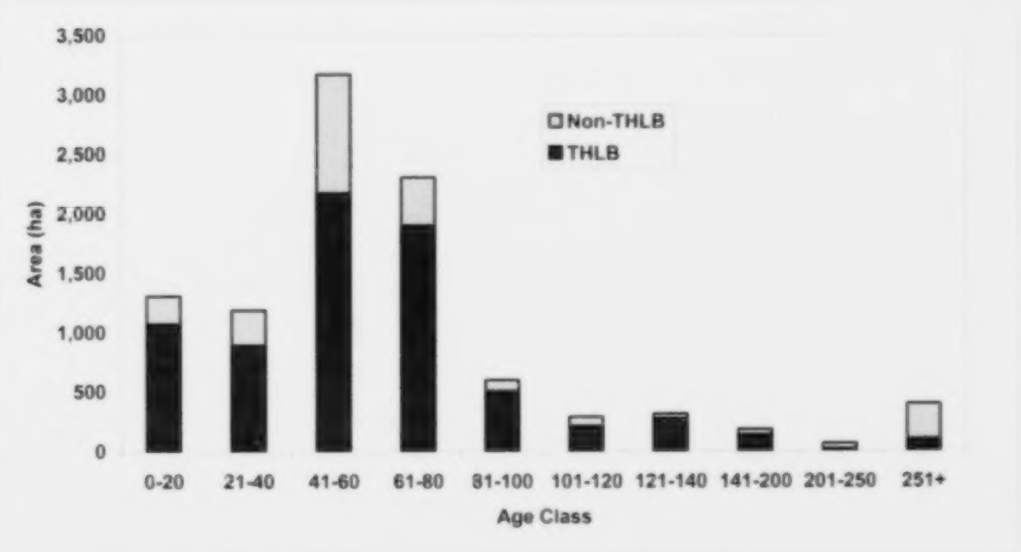

Figure 3- Current age class distribution (THLB)

10.6 Transition from Natural to Managed Stands

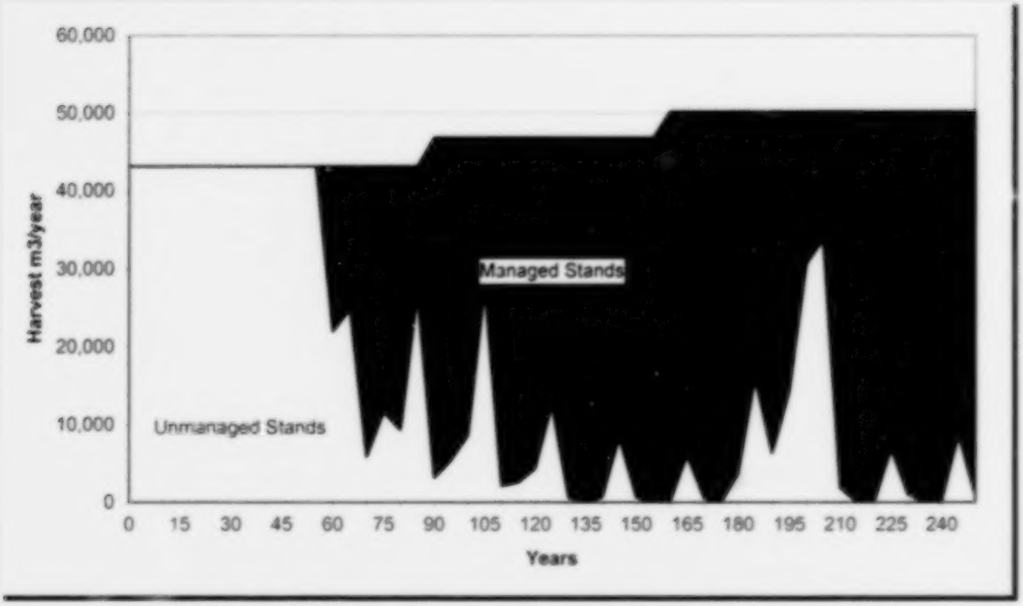

Figure 4– Base case harvest volume from existing and managed stands

Figure 4 illustrates the transition of harvest from existing to managed stands and their contribution to the overall harvest volume projected in the base case. Over the first six decades the timber supply is provided almost entirely by existing stands. In the 7th decade most managed stands have reached a harvestable age and form 80% of the harvest. The maintenance of VQOs and landscape level biodiversity, particularly old growth, result in the harvest of significant volumes of natural existing stands later in the planning horizon as demonstrated by the "peaks" in Figure 4.

10.7 Average Harvest Age

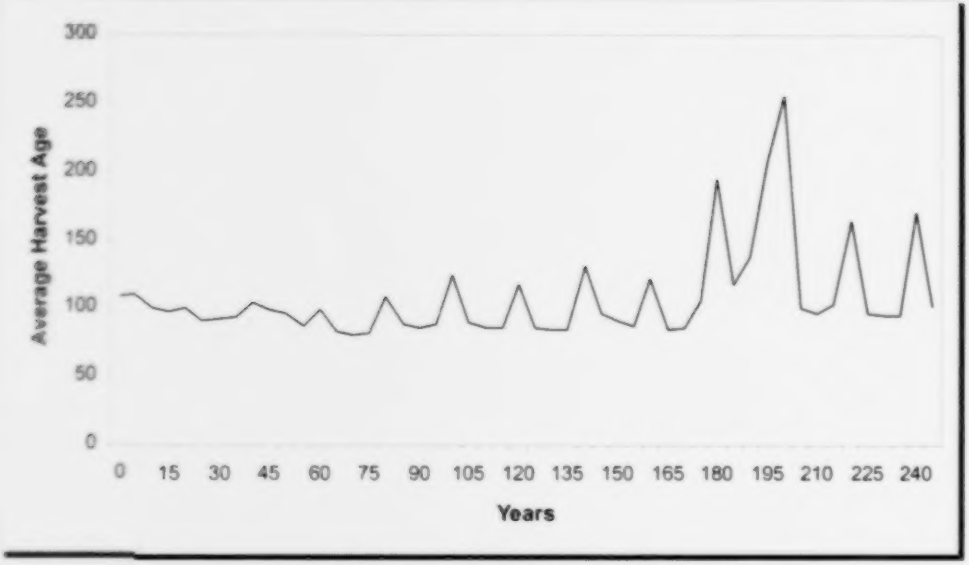

Figure 5 - Average harvest age

As illustrated in Figure 5 the average harvest age fluctuates around 100 years until the 17th decade after which it exhibits great variation reaching 270 years at year 200 and maintaining a slightly higher average near the end of the planning horizon. Retaining stands to meet VQO and old growth requirements and eventually harvesting these stands, some of them at very old ages, cause the large variation in the average harvest age.

10.8 Average Harvest Volume

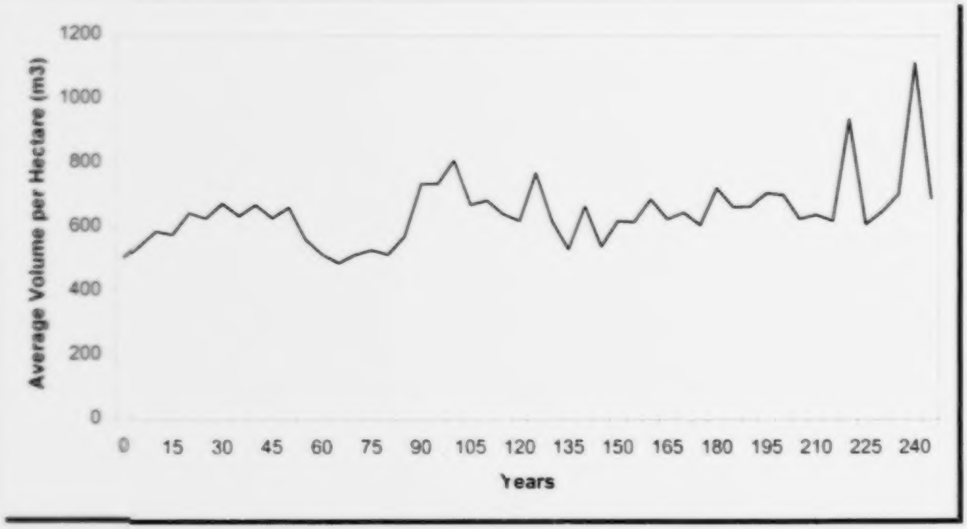

Figure 6 - Average harvest volume

As shown in Figure 6, the average volume per hectare harvested within the base case forecast increases slightly over the planning horizon. This is not typical, particularly for coastal forest estates, which often have a large portion of old forest remaining, resulting in high per hectare harvest volumes at the beginning of the planning horizon. As older age stands must be retained and recruited for landscape level biodiversity and VQOs, they have somewhat higher per hectare volumes when harvested.

10.9 Sensitivity Analyses

10.9.1.1 Synopsis

Description	Test	% Difference from Base Case
Land base	+10%, -10%	+10%, -10% s-t
Existing stand volume	+10%, -10%	+10% s-t, -8% s-t
Regenerated stand volume	+10%, -10%	+8% l-t, -8% l-t
Site Index	Sibec	+14 - 23%
OGSI		No impact
Minimum harvest age	+10 years, -10 years	-9% s-t, +2%
Green-up	+5 years, -5 years	-14% m-t, +9%
VQO targets	+5% points, -5% points	-26% s-t, +14% s-t
Old growth targets	Low BEO, old growth now	-4% m-t, No impact l-t

10.9.2 Summary of Timber Supply Dynamics

Short Term (1 – 20 years)

- The short –term timber supply is sensitive to changes in forest cover constraints; an increase in green-up ages produces an immediate drop in short-term timber supply. Similarly, uncertainty of VQO target % has a significant effect on timber supply over the short term.
- Timber supply is sensitive to size of THLB in the short, medium and long term.
- Timber Supply is sensitive to the accuracy of the estimates of existing stand volumes in the short and medium term.
- Having to meet all old seral targets immediately would have a 4% impact on the long-term timber supply.

- Overall site index adjustment would have a significant impact on timber supply in the short, medium and long term.

Mid Term (21-80 years)

- Increase of green-up ages has a large impact on the mid term timber supply. Uncertainty of VQO % also has a significant effect on timber supply over the mid-term.
- A 10% increase in minimum harvest ages results in a 9% decrease in the mid-term timber supply.
- Timber Supply is sensitive to the accuracy of the estimates of existing stand volumes in the short and medium term.
- Overall site index adjustment would have a significant impact on timber supply in the short, medium and long term.

Long Term (80 + years)

The long-term timber supply is sensitive to several factors:

- Changing the VQO class by 5% results in a 10% increase or decrease in the long-term harvest level.
- Having to meet all old seral targets immediately would have no impact on the long-term timber supply.
- The long term is sensitive to changes in regenerated stand volumes. A 10% increase or decrease in volume results in an 8% change to the long-term harvest.
- Overall site index adjustment would have a significant impact on timber supply in the short, medium and long term.

11 Appendix 2

11.1 Cost and Employment Assumptions

Table 8 – Cost and employment assumptions

Activities	Area ha/year	Cost $/ha	Jobs P-days/ha	Source
Surveys	200	40	0.1	Kim Allan
Planting[1]	70	1,100	2	Kim Allan
Brushing[1]	90	450	1.5	Kim Allan
Spacing[1]	56	1,000	3.5	Kim Allan
Fertilization	58.5	300	0.1	Kim Allan
Pruning 1st lift	16	1,000	4	Kim Allan
Pruning 2nd lift	16	1,400	5	Kim Allan

[1] Planting, spacing and brushing areas include 5 ha from proposed deciduous conversion

12 References

Atherton, L.P. 1999. *Incremental Silviculture Strategy for B.C. - Working paper #2:* Concepts and Strategy of Planning - Proposed Planning Framework. February 19, 1999. Victoria, B.C.

B.C. Ministry of Forests, 1991. *Regional Stand Tending Guidelines*. Vancouver Circular Letter VR91-558. Vancouver Forest Region, Nanaimo, British Columbia.

B.C. Ministry of Forests. 1998. *Vancouver Region Incremental Silviculture Objectives*. Handout. Vancouver Forest Region, Nanaimo, British Columbia.

Pedersen, L. 1996. Tree Farm Licence TFL 26 Rationale for Allowable Annual Cut (AAC) Determination. Victoria, British Columbia.

District of Mission, 1996. Mission Tree Farm Licence 26, Management Plan 7. Mission, British Columbia.

District of Mission, 2001. Mission Tree Farm Licence 26, Draft Management Plan 8. Mission, British Columbia.

District of Mission, 2001. Mission Tree Farm Licence 26, Draft Timber Supply Analysis Report.

Evaluation Rating of TFL/ TFL26 Sustainable Harvest RMP

Category	yes	partly	no	Rating (H, M, L)
Submitted by June 27 (TFL) or July 16 (TSA).			no	
Basic data for TFL provided, area, current AAC, current harvest forecast, site/age class species profile. Long Run Sustainable Yield stated.	yes			
History of past treatments provided.	yes			
Text submitted identifying backlog and enhanced forestry program issues.	yes			
Opportunities to increase timber supply addressed in text, e.g. short/mid/long-term, timber flow benefits. Consistent with Type 1 or 2 Analysis.	yes			
Opportunities to increase timber value addressed in text, if none so stated. Consistent with Type 1 or 2 Analysis.	yes			
Opportunities to increase habitat supply/biodiversity addressed in text, if none so stated. Consistent with Type 1 or 2 Analysis.	NA			
Working targets proposed for volume/value/habitat.		partly		
Satisfactory treatment regime table provided.	yes			
Satisfactory rationale provided for the priority ranking of activities i.e. link to MP ,TSR, other . Consistent with Type 1 or 2 Analysis.	yes			
Where habitat supply/biodiversity activity indicated, rationale on why the silviculture treatment specifically maintains the non-timber values.	NA			
All summary tables submitted satisfactorily.	yes			
Projected job outcome of proposed program stated.	yes			
Opportunities to achieve FRBC performance goals Is program within reasonable range of last year's SH RMP projections for year 2002/03. Plan Comparison Table submitted with explanation for variations.			No	
Performance measures,…where TFL used local factors supporting rationale provided.	NA			
SH study form completed satisfactorily			No	
Communication log documents partnership group and stakeholder discussions and issues.			No	
Other (describe)				
Overall rating	n/a	n/a	n/a	

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): TFL 26

Stand Tending	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)**
Surveys	150	150	0.0	2	1	33	53.33	61.6	
Spacing	55	23	-58.2	2	2	1980	1086.96	-45.1	Fewer ha' s suitable for spacing than anticipated
Pruning	45	37	-17.8	2	3	2420	1000	-58.7	
Fertilizing	200	300	50.0	1	1	330	300	-9.1	Fertilization Plan produced identified more area than previously anticipated

Forest Health	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)**
Spacing	0	0	#DIV/0!	0	0	1980	n/a	#VALUE!	
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Habitat Supply/ Biodiversity									
Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	
Non-Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): TFL 26

	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Legal Obligation									
Surveys	0	0	#DIV/0!	1	1	33	n/a	#VALUE!	More brushing surveys required than anticipated as a number of brushing treatments not completed during fiscal 2001.
Site preparation	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	1	1	1320	n/a	#VALUE!	BSP activities started a year late
Brushing	0	0	#DIV/0!	1	1	1155	n/a	#VALUE!	Surveys showed not all brushing is required.
B/L Reforestation									
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	Most backlog surveys completed. Free growing surveys now shown under Impeded.
Site Prep	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	BSPs not prepared for areas proposed for planting last year.
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Impeded									
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	Free growing surveys included under backlog in 2001 RMP table.
brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	Area not brushed in 2001.
Site Resoration									
Fill planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Rehab	0	0	#DIV/0!	0	0	2200	n/a	#VALUE!	
Reforestation	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** Campbell River District SUM TSA & TFLs

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

Campbell River District SUM TSA & TFLs
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities

Stand Tending

	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	7800	6225	6550	5825	6450	35.33	275550	
Spacing	515	480	580	480	580	2095.72	1079300	
Pruning	440	300	250	250	150	2447.49	1076900	
Fertilizing	5150	5450	4950	4450	4950	320.87	1652500	
Other	0	0	0	0	0	0.00	0	
Totals hectares	13905	12455	12330	11005	12130	293.73	4,084,250	
Planning and prescriptions							180,325	
Total dollars							4,264,575	

Forest Health Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Spacing	0	0	0	0	0	0.00	0	
Pruning	5	5	5	5	5	2,417.10	12100	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	5	5	5	5	5	2,410.36	12,100	

Habitat Supply and Biodiversity Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Riparian treatments	142	65	22	20	20	2,921.07	414800	
Non-riparian treatments	60	135	180	180	180	2,083.16	125000	
Totals hectares	202	200	202	200	200	2,672.17	539,800	

Domestic Range

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	7800	6225	6550	5825	6450	35.33	275,550	
Spacing	515	480	580	480	580	2,095.70	1,079,300	
Pruning	445	305	255	255	155	2,447.15	1,089,000	
Fertilizing	5150	5,450	4,950	4,450	4,950	320.87	1,652,500	
Other stand tending activities	202	200	202	200	200	2,671.97	539800	
Totals hectares	14112	12460	12335	11010	12135	328.52	4,636,150	
Planning and prescriptions							180,325	
Studies funding							131600	
Total dollars							4,948,075	

Strathcona TSA
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities

Stand Tending

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1500	1500	1500	1500	1500	42.50	63750	1
Spacing	100	100	100	100	100	2400.00	240000	2
Pruning	200	150	100	100	0	2400.00	480000	2
Fertilizing	1500	1500	1500	1500	1500	300.00	450000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	3300	3250	3200	3200	3100	373.86	1,233,750	
Planning and prescriptions							50,000	1
Total dollars							1,283,750	

Forest Health Enhancement

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Domestic Range

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1500	1500	1500	1500	1500	42.50	63,750	
Spacing	100	100	100	100	100	2,399.98	240,000	
Pruning	200	150	100	100	0	2,399.99	480,000	
Fertilizing	1500	1,500	1,500	1,500	1,500	300.00	450,000	
Other stand tending activities	0	0	0	0	0	0.00	0	
Totals hectares	3300	3250	3200	3200	3100	373.86	1,233,750	
Planning and prescriptions							50,000	
Studies funding							0	
Total dollars							1,283,750	

TFL 19
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1400	900	800	800	800	33.00	46200	2
Spacing	150	150	150	150	150	1900.00	285000	1
Pruning	100	50	50	50	50	2300.00	230000	2
Fertilizing	1200	1500	1000	1000	1000	330.00	396000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	2850	2600	2000	2000	2000	335.86	957,200	
Planning and prescriptions							15,000	1
Total dollars							972,200	
Forest Health Enhancement								
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	10	10	10	10	10	1,980.00	19800	2
Non-riparian treatments	50	50	50	50	50	1,900.00	95000	2
Totals hectares	60	60	60	60	60	1,913.33	114,800	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	1400	900	800	800	800	33.00	46,200	
Spacing	150	150	150	150	150	1,899.99	285,000	
Pruning	100	50	50	50	50	2,299.98	230,000	
Fertilizing	1200	1,500	1,000	1,000	1,000	330.00	396,000	
Other stand tending activities	60	60	60	60	60	1,913.24	114800	
Totals hectares	2910	2600	2000	2000	2000	368.38	1,072,000	
Planning and prescriptions							15,000	
Studies funding							0	
Total dollars							1,087,000	

Naka Tree Farm Licence 25 Block 2
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	500	0	0	0	0	50.00	25000	1
Spacing	0	0	0	0	100	0.00	0	
Pruning	40	0	0	0	0	3000.00	120000	2
Fertilizing	0	300	0	0	0	0	0	
Other	0	0	0	0	0	0.00	0	
Totals hectares	540	300	0	0	100	268.52	145,000	
Planning and prescriptions							13,525	1
Total dollars							158,525	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0
Pruning	0	0	0	0	0	0.00	0
Other treatments	0	0	0	0	0	0.00	0
Totals hectares	0	0	0	0	0	0.00	0

Habitat Supply and Biodiversity Enhancement

Riparian treatments	0	0	0	0	0	0.00	0
Non-riparian treatments	0	0	0	0	0	0.00	0
Totals hectares	0	0	0	0	0	0.00	0

Domestic Range

Treatments	0	0	0	0	0	0.00	0

Enhanced Forestry Activities - Management Unit Total

Surveys	500	0	0	0	0	50.00	25,000
Spacing	0	0	0	0	100	0.00	0
Pruning	40	0	0	0	0	2,999.93	120,000
Fertilizing	0	300	0	0	0	#DIV/0!	0
Other stand tending activities	0	0	0	0	0	0.00	0
Totals hectares	540	300	0	0	100	268.51	145,000
Planning and prescriptions							13,525
Studies funding							0
Total dollars							158,525

Naka Tree Farm Licence 25 Block 3
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	50	250	50	50	50	40.00	2000	1
Spacing	20	20	20	20	20	2250.00	45000	1
Pruning	30	30	30	30	30	2450.00	73500	1
Fertilizing	0	200	0	0	0	0.00	0	
Other	0	0	0	0	0	0.00	0	
Totals hectares	100	500	100	100	100	1204.98	120,500	
Planning and prescriptions							11,800	1
Total dollars							132,300	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	50	250	50	50	50	40.00	2,000	
Spacing	20	20	20	20	20	2,249.89	45,000	
Pruning	30	30	30	30	30	2,449.92	73,500	
Fertilizing	0	200	0	0	0	0.00	0	
Other stand tending activities	0	0	0	0	0	0.00	0	
Totals hectares	100	500	100	100	100	1,204.90	120,500	
Planning and prescriptions							11,800	
Studies funding							0	
Total dollars							132,300	

TFL 39 - Blocks 2&5 - Campbell River District
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	3200	3200	3200	3200	3200	33.00	105600	1
Spacing	185	185	185	185	185	1980.00	366300	2
Pruning	20	20	20	20	20	2420.00	48400	3
Fertilizing	1300	1300	1300	1300	1300	330.00	429000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	4705	4705	4705	4705	4705	201.76	949,300	
Planning and prescriptions							60,000	1
Total dollars							1,009,300	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0
Pruning	0	0	0	0	0	0.00	0
Other treatments	0	0	0	0	0	0.00	0
Totals hectares	0	0	0	0	0	0.00	0

Habitat Supply and Biodiversity Enhancement

Riparian treatments	120	45	0	0	0	3,000.00	360000	1
Non-riparian treatments	0	75	120	120	120	0.00	0	
Totals hectares	120	120	120	120	120	2,999.98	360,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	3200	3200	3200	3200	3200	33.00	105,600	
Spacing	185	185	185	185	185	1,979.99	366,300	
Pruning	20	20	20	20	20	2,419.88	48,400	
Fertilizing	1300	1,300	1,300	1,300	1,300	330.00	429,000	
Other stand tending activities	120	120	120	120	120	2,999.90	360000	
Totals hectares	4825	4705	4705	4705	4705	271.36	1,309,300	
Planning and prescriptions							60,000	
Studies funding	Fertilization Regimes						28000	1
Total dollars							1,397,300	

1/4/2006

TFL 45 Campbell River
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities

Stand Tending

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	700	75	700	75	700	21.43	15000	1
Spacing	50	0	100	0	0	2500.00	125000	1
Pruning	50	50	50	50	50	2500.00	125000	3
Fertilizing	500	0	500	0	500	300.00	150000	2
Other	0	0	0	0	0	0.00	0	
Totals hectares	1300	125	1350	125	1250	319.23	415,000	
Planning and prescriptions							10,000	1
Total dollars							425,000	

Forest Health Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Riparian treatments	2	0	2	0	0	2,500.00	5000	1
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	2	0	2	0	0	2,498.75	5,000	

Domestic Range

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	700	75	700	75	700	21.43	15,000	
Spacing	50	0	100	0	0	2,499.95	125,000	
Pruning	50	50	50	50	50	2,499.95	125,000	
Fertilizing	500	0	500	0	500	300.00	150,000	
Other stand tending activities	2	0	2	0	0	2,495.01	5000	
Totals hectares	1302	125	1350	125	1250	322.58	420,000	
Planning and prescriptions							10,000	
Studies funding							5000	1
Total dollars							435,000	

Tree Farm Licence No. 47 - Portion in the Campbell River Forest District
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities

Stand Tending

	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	450	300	300	200	200	40.00	18000	1
Spacing	10	25	25	25	25	1800.00	18000	2
Pruning	0	0	0	0	0	0.00	0	
Fertilizing	650	650	650	650	650	350.00	227500	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	1110	975	975	875	875	237.39	263,500	
Planning and prescriptions							20,000	1
Total dollars							283,500	

Forest Health Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Spacing	0	0	0	0	0	0.00	0	
Pruning	5	5	5	5	5	2,420.00	12100	2
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	5	5	5	5	5	2,419.03	12,100	

Habitat Supply and Biodiversity Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Riparian treatments	10	10	10	10	10	3,000.00	30000	2
Non-riparian treatments	10	10	10	10	10	3,000.00	30000	2
Totals hectares	20	20	20	20	20	3,000.00	60,000	

Domestic Range

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	450	300	300	200	200	40.00	18,000	
Spacing	10	25	25	25	25	1,799.82	18,000	
Pruning	5	5	5	5	5	2,419.52	12,100	
Fertilizing	650	650	650	650	650	350.00	227,500	
Other stand tending activities	20	20	20	20	20	2,999.55	60000	
Totals hectares	1135	980	980	880	880	295.68	335,600	
Planning and prescriptions							20,000	
Studies funding							98600	1
Total dollars							454,200	

1/4/2006

Campbell River District SUM TSA & TFLs
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	26	26	26	26	26	32.72	851	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	26	0	26	0	0	1,145.85	29799	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	52	26	52	26	26	589.05	30,650	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							30,650	
Backlog Reforestation								
Surveys	390	240	190	140	140	33.72	13150	
Site preparation	0	0	0	0	0	0.00	0	
Planting	5	5	0	0	0	1,318.42	6600	
Brushing	0	5	5	0	0	0.00	0	
Totals hectares	395	250	195	140	140	50.00	19,750	
Seed purchase	6000	6000	0	0	0	1.00	6,000	
Prescriptions and planning dollars							1,600	
Total backlog reforestation							27,350	
Impeded areas								
Surveys	305	85	0	10	0	35.98	10975	
Brushing	150	30	20	30	20	1,143.98	171600	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	455	115	20	40	20	401.25	182,575	
Prescriptions and planning dollars							7,850	
Total impeded areas							190,425	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	6	10	10	10	10	2,197.80	13200	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	6	10	10	10	10	2,192.69	13,200	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							13,200	
Backlog Program Activities - Management Unit Total								
Surveys	721	351	216	176	166	34.64	24976	
Site preparation	6	10	10	10	10	2,192.69	13200	
Planting	5	5	0	0	0	1,312.91	6600	
Brushing	176	35	51	30	20	1,144.21	201399	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	908	401	277	216	196	271.09	246175	
Seed purchase	6000	6000	0	0	0	1.00	6000	
Prescriptions and planning							9,450	
Recommended studies							0	
Total backlog program							261,625	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Strathcona TSA
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys		0	0	0	0	#DIV/0!		
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	
Impeded areas								
Surveys	200	0	0	0	0	35.00	7000	
Brushing	50	0	0	0	0	950.00	47500	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	250	0	0	0	0	218.00	54,500	
Prescriptions and planning dollars							0	
Total impeded areas							54,500	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	200	0	0	0	0	35.00	7000	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	50	0	0	0	0	949.96	47500	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	250	0	0	0	0	217.99	54500	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							54,500	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

TFL 19
Backlog Program Table
For the 2002/03 Fiscal Year

Activities

Legal Obligations

	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	

Backlog Reforestation

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	150	50	50	0	0	33.00	4950	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	150	50	50	0	0	33.00	4,950	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							4,950	

Impeded areas

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	75	75	0	0	0	33.00	2475	1
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	75	75	0	0	0	33.00	2,475	
Prescriptions and planning dollars							0	
Total impeded areas							2,475	

Site Restoration

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	

Backlog Program Activities - Management Unit Total

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	225	125	50	0	0	33.00	7425	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	225	125	50	0	0	33.00	7425	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							7,425	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Naka Tree Farm Licence 25 Block 2
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	
Impeded areas								
Surveys	30	0	0	0	0	50.00	1500	1
Brushing	30	0	0	0	0	1,200.00	36000	2
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	60	0	0	0	0	624.99	37,500	
Prescriptions and planning dollars							3,850	1
Total impeded areas							41,350	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	30	0	0	0	0	50.00	1500	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	30	0	0	0	0	1,199.96	36000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	60	0	0	0	0	624.89	37500	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							3,850	
Recommended studies							0	
Total backlog program							41,350	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Naka Tree Farm Licence 25 Block 3
Backlog Program Table
For the 2002/03 Fiscal Year

Activities

	Treatment Area Goals (ha)					Plan 2002/03		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	

Backlog Reforestation

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	40	40	40	40	40	40.00	1600	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	40	40	40	40	40	40.00	1,600	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							100	1
Total backlog reforestation							1,700	

Impeded areas

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	10	0	10	0	0.00	0	
Brushing	0	10	0	10	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	20	0	20	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	

Site Restoration

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	

Backlog Program Activities - Management Unit Total

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	40	50	40	50	40	40.00	1600	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	10	0	10	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	40	60	40	60	40	39.99	1600	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							100	
Recommended studies							0	
Total backlog program							1,700	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

TFL39 - Blocks 2&5 - Campbell River District
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	26	26	26	26	26	32.73	851	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	26	0	26	0	0	1,146.12	29799	1
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	52	26	52	26	26	589.39	30,650	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							30,650	
Backlog Reforestation								
Surveys	200	150	100	100	100	33.00	6600	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	5	5	0	0	0	1,320.00	6600	1
Brushing	0	5	5	0	0	0.00	0	
Totals hectares	205	160	105	100	100	64.39	13,200	
Seed purchase	6000	6000	0	0	0	1.00	6,000	1
Prescriptions and planning dollars							1,500	1
Total backlog reforestation							20,700	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	20	20	20	20	20	1,155.00	23100	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	20	20	20	20	20	1,154.88	23,100	
Prescriptions and planning dollars							2,000	1
Total impeded areas							25,100	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	226	176	126	126	126	32.97	7451	
Site preparation	0	0	0	0	0	0.00	0	
Planting	5	5	0	0	0	1,319.21	6600	
Brushing	46	25	51	20	20	1,149.95	52899	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	277	206	177	146	146	241.69	66950	
Seed purchase	6000	6000	0	0	0	1.00	6000	
Prescriptions and planning							3,500	
Recommended studies							0	
Total backlog program							76,450	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

1/4/2006

TFL 45 Campbell River
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	50	0	0	0	0	1,300.00	65000	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	50	0	0	0	0	1,299.95	65,000	
Prescriptions and planning dollars							2,000	
Total impeded areas							67,000	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	50	0	0	0	0	1,299.95	65000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	50	0	0	0	0	1,299.64	65000	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							2,000	
Recommended studies							0	
Total backlog program							67,000	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

1/4/2006

Tree Farm Licence No. 47 - Portion in the Campbell River Forest District
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	6	10	10	10	10	2,200.00	13200	2
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	6	10	10	10	10	2,199.27	13,200	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							13,200	
Backlog Program Activities - Management Unit Total								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	6	10	10	10	10	2,199.27	13200	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	6	10	10	10	10	2,194.88	13200	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							13,200	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

1/4/2006

Campbell River District SUM TSA & TFLs
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.
Potential volume/ha gain (m3/ha/yr) provincial factors:

0.77	0	0	0	2.9	0.41	0.25	0	0.46	

Years the factor will affect:

0	65	65	65	65	65	65	65	65	

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.
Provincial factors for estimated value gain at harvest

						5-15%	15-30%	1-5%	

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.
Est. short term employment rate (person days/ha) provincial factors:

0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	**Nursery Seedling Production**	**Silviculture Surveys**
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	5		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	5		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			7,800
Total backlog surveys from the backlog table.			721
33% of all silviculture surveys			2,812
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply		(A)	0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			2,812

Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR)
Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003

Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas)
Estimate area that will be classified as free growing after a survey in 2002/2003

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity.

Campbell River District SUM TSA & TFLs
Performance Measures Based on Activities Planned for 2002/2003
Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	5	0	2,812	6	5	176	515	445	5,150	9,316	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	961	4,691	8,369	0	154,500		168,521
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	1	0	281	6	10	459	2,039	2,020	927	932	
3.3	Estimated total full time equivalent positions (FTE)	0	0	2	0	0	3	11	11	5	5	37
4.1	**Forest Health Enhancement (ha)**											5
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											202
5.3	Est. area with secondary value provided to biodiversity (ha)											0

Campbell River District SUM TSA & TFLs
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	14,112	12,460	12,335	11,010	12,135	329	4,636,150
Planning, prescriptions and seedlings							311,925
Backlog Program Field Activities	908	401	277	216	196	271	246,175
Planning, prescriptions and seedlings							15,450
Totals	15,020	12,861	12,612	11,226	12,331		5,209,700

Performance Measures

Potential total merchentable volume increment in 65 years	168,521 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	37 FTEs
Forest health enhancement area	5 ha
Planned area for specific wildlife forage or habitat maintenance	202 ha
Estimated area with secondary value provided to biodiversity	0 ha

2002/03 – 2006/07 Sustainable Harvest Component of the Campbell River Forest District Resource Management Plan

Strathcona TSA

Overview of Sustainable Harvest Issues for the District

The January 1,2000 Rationale for AAC Determination in the Strathcona TSA, reduced the cut by 10% to 1.278 million m3. The base case harvest forecast predicts a decline to a long run sustained yield of 1.07million m3

Historic levels of incremental silviculture treatment in the TSA have focused on timber flow , piece size, and volume increment. Past investments, especially spacing, have often led to reduced volumes in regenerated stands. In addition, levels of treatment have shown a continued decline since intensive silviculture programs first began 25 years ago. Historic averages have shown that fertilizing and spacing have averaged 1000 ha.each per year, while pruning averaged 100 ha. per year. Recent levels under FRBC have decreased significantly.

As a result of reduced silviculture investment dollars, demand shifting away from large piece sizes, and a declining AAC, a dramatic rethinking of regimes and priorities is required in the TSA. As part of this process, the TSA will focus more heavily on using intensive silviculture funds to increase volume.This means more fertilization, less spacing, and very little pruning. In addition, basic silviculture will emphasize full stocking, and increased stocking levels that do not unduly impact piece size.Silviculture investments will be concentrated in areas where there is ready access to processing facilities (Sayward TSB), and the expectations that come with commercial thinning and multiple fertilization regimes. Outlying areas, where stands are predominantly Hw, will utilize extensive regimes that focus on maximizing volumes. Consideration will be given to habitat objectives or local issues, however intensive silviculture in the Kyuquot and Loughborough TSB's, will be primarily directed at the fertilization of older immature Fdc stands, or where recent investments in stocking control have occured.

The following provides a summary of how the stategy will be implemented:

1) Fertilization levels will increase, and focus primarily on older immature Fdc stands throughout the TSA. This program will be directed at medium sites, where cost effective projects can be established. Younger spaced stands will be included when they are located in the vicinity. Fertilization is the highest priority.

2) Spacing levels will decrease, and focus almost exclusively on areas where intensive regimes are appropriate. These regimes will include commercial thinning and multiple fertilization, and be primarily directed at Fdc stands close to processing facilities. In addition, post spacing/ commercial thinning stocking levels will increase to minimize volume losses. Basic silviculture will maintain higher initial stocking levels to ensure full site occupancy. Aggressive planting and brushing programs are required. It is expected that these stands will be fertilized every 10 years.

3) Pruning will be restricted to "second lift" only. No new first lift pruning initiatives are expected to be given a priority.

4) Hw stands will be managed extensively to maximize volume on the shortest rotation

Strathcona TSA
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

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Entries needed are in red

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Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.

The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.77	0	0	0	2.9	0.41	0.25	0	0.46	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	
Provincial factors for estimated value gain at harvest							5-15%	15-30%	1-5%	
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys

Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	**Nursery Se..lling Production**	**Silviculture Surveys**
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	0		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	0		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			1,500
Total backlog surveys from the backlog table.			200
33% of all silviculture surveys			561
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply			(A) 0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			561
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			200

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity.

Strathcona TSA

Performance Measures Based on Activities Planned for 2002/2003

Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	0	0	561	0	0	50	100	200	1,500	2,411	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.0	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	1	1,333	1,625	0	45,000		47,958
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			200								200
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	0	0	56	0	0	131	396	908	270	241	
3.3	Estimated total full time equivalent positions (FTE)	0	0	0	0	0	1	2	5	2	1	11
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											0
5.3	Est. area with secondary value provided to biodiversity (ha)											0

Strathcona TSA
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	3,300	3,250	3,200	3,200	3,100	374	1,233,750
Planning, prescriptions and seedlings							50,000
Backlog Program Field Activities	250	0	0	0	0	218	54,500
Planning, prescriptions and seedlings							0
Totals	3,550	3,250	3,200	3,200	3,100		1,338,250

Performance Measures

Potential total merchentable volume increment in 65 years	47,958 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	200 ha
Estimated total full time equivalent positions generated	11 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	0 ha
Estimated area with secondary value provided to biodiversity	0 ha

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): Strathcona TSA

Stand Tending	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)**
Surveys	3000	1500	-50.0	1	1	33	42.5	28.8	Reduced requirement
Spacing	500	100	-80.0	2	2	1980	2400	21.2	Continuous underfunding and need to emphasize primary goal (FERTILIZATION0
Pruning	250	200	-20.0	2	2	2420	2400	-0.8	Second lift only. Some stands eliminated since they are too old and site indev below requirement
Fertilizing	2000	1500	-25.0	1	1	330	300	-9.1	Insufficient funding. Fewer Fdc stands meet priority

Forest Health	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)**
Spacing	0	0	#DIV/0!	0	0	1980	n/a	#VALUE!	
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Habitat Supply/ Biodiversity									
Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	
Non-Riparian	50	0	-100.0	0	0	3000	n/a	#VALUE!	No funding in the past. Low w priority

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): Strathcona TSA

	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Legal Obligation									
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site preparation	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
B/L Reforestation									
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site Prep	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	

	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Impeded									
Surveys	800	200	-75	1	1	33	35	6.1	Lower requirement for funding
brushing	100	50	-50	0	0	1155	950	-17.7	Lower requirement for funding
Site Resoration									
Fill planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Rehab	0	0	#DIV/0!	0	0	22[illegible]	n/a	#VALUE!	
Reforestation	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	

Western Forest Products Limited TFL 19
Sustainable Harvest Component of Campbell River Forest District Resource Management Plan
(Revised June 2001)

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INTRODUCTION

This document is submitted in response to the Ministry of Forests and Ministry of Environment's request for a Resource Management Plan (RMP) to outline Forest Renewal B. C. (FRBC) funded silviculture programs. This information is drawn from Management Plan(MP) 8 and 9 for TFL 19 and addresses TFL 19 needs. MP 9 scheduled to take effect August 1, 2001 is in its final stage of approval and when approved will guide activites for the next 5 year peoiod. A Type 1 Silviculture Investment Strategy analysis will be completed in 2001 and will give further direction to silviculture programs.

1.0) BASIC DATA

Administrative Information:

TFL 19 is located on the west coast of Vancouver Island in the vicinity of Nootka Sound. It is located 80 km west of Campbell River.

TFL 19 is held by Doman-Western Lumber Ltd. and managed by Western Forest Products Limited (WFP). Doman -Western Lumber Ltd. was formed in December 1997 when Doman Industries Limited acquired the Crown assets of Pacific Forest Products Limited.

The communities of Gold River, Tahsis, and Zeballos are dependent on the economic activities generated from TFL 19. Logging operations are conducted from Gold River, Zeballos, Tahsis and several camps located throughout the Nootka Sound area. Fibre from TFL 19 helps supply the raw material needs of Doman's nine saw mills and two pulp mills.

Land Area

TFL 19 covers 191,992 ha broken down as follows: 148,178 ha productive forest and 43,814 ha non forest or alpine. Further reductions from the productive land base for inoperable, inaccessible, environmental, and social values amounts to 63,101 ha. The long term land base for comercial timber production is 85,077 ha.

The forests lie within the wetter maritime coastal western hemlock biogeoclimatic zone with annual precipitation levels reaching 3,000 to 5,000 mm. The dominant timber species is western hemlock mixed with varying amount of amabilis fir, Douglas-fir, western red cedar, and lesser amounts of sitka spruce, yellow cedar, and mountain hemlock.

Annual Allowable Cut and Harvest Forecast

The current (1997 – 2001) annual allowable cut is 978,000 m^3.

Depending on the options chosen in MP 9, the current timber supply analysis indicates that the long run sustainable yield (over the next 50 – 100 years will be between 725,000 m^3 and 785,000 m^3.

Site Class Profile

There are 13 forest types within the TFL that have been divided into good, medium and poor sites for timber supply modelling purposes. The site classes (Breast Height 50 yrs) are shown below:

Site Class	Site Indices (m at BH 50)
Good	32.5+

Medium	22.5 - 32.4
Poor	12.5 - 22.4

Age Class Profile

Based on a 1991 inventory the table below summarizes the approximate age classes within TFL 19.

Age Class	Years	Estimated area (ha)	Percentage of land base (%)
1	1 - 20	20,854	14
2	21 - 40	9,038	6
3	41 - 60	2,073	1
4	61 - 80	9,747	6
5	81 - 100	5,457	4
6	101 - 120	541	<1
7	121 - 140	1,320	1
8 & 9	141+	104,153	67
NSR/NCBR		905	<1
TOTAL		154,088	100

Species Profile

Based on a 1991 inventory the table below summarizes the approximate species within TFL 19.

Species	Percent	Species	Percent
Hw	46	Ss	0.5
Ba	17	Pl	0.3
Fd	13	Pw	0.2
Yc	12		
Cw	11		

2.0) TIMBER SUPPLY ISSUES

2.1) TIMBER QUANTITY

The amount of timber available to harvest within TFL 19 depends on several factors, including but not limited to: the Forest Practices Code (restrictions with regard to harvesting within riparian areas, green up requirements, block size requirements, etc.), the visual landscape analysis, ungulate winter ranges, harvesting operability limits,recreation features, among others.

Opportunities to Increase Timber Quantity

The underlying rationale for an incremental program on TFL 19 is to improve the yield, and quality from the regenerated stands and to compensate for the forest age class imbalance by treatments that will increase the timber supply availability in 30 to 60 years. Incremental silviculture treatments will consist of genetic improvement, juvenile spacing, commercial thinning, pruning, and fertilization.

Benefits sought from an incremental program will be: increase in timber stand value, improvement in volume yield, shortened rotation ages, enhanced biodiversity capability, improved security and thermal cover for wildlite, and creation of local forestry employment opportunities.

Second growth stands are currently targeted for maximum fibre production in smaller diameter sawlogs, on a 60 to 100 year rotation.

Potential Treatments to Increase Timber Quantity

Planting with Genetically Improved Stock: All areas harvested in TFL 19 are usually reforested within one year of harvest. Areas are planted with genetically improved seedlings when available. All Fd and most of the Cw andHw seedlings planted in TFL19 are from genetically improved seed with anticipated gains in volume yields from 12% in Fd, 2% in CW and 8% in Hw. There are no (or very little) areas of backlog reforestation required within TFL 19.

Juvenile spacing: Stands will be assessed for potential spacing where stands exhibit competition for growing space. Potential candidate stands for juvenile spaced should have the following attributes:

1). Densities greater than 3,000 sph
2). Hw,Fd stands with > 2,500 sph
3). Average Age 12 – 18 yrs
4). Average Height 3 – 8 metres
5). Site Index >25

Stands will generally be spaced to 1,000 sph (1,200 sph in HwCw salal areas, and at higher snowpack areas). This will allow for commercial thinning opportunities when stands are 35 to 45 years old.

It is expected that 10 to 15% of regenerated stands will be spaced. Juvenile spacing activities are dependent on FRBC funding.

Fertilization: Many second growth stands on TFL 19 are being fertilized at the time of planting. This helps seedlings achieve free growing sooner thereby minimizing brushing costs.

Post free growing stands will be assessed for fertilization and should have the following attributes:

1). Fd stands or stands with at least 50% Fd mixed as crop trees or 40% and greater than 1m taller than the surrounding trees in the stand..
2). Hw Cw salal sites (2nd priority)
3). Spaced and/or pruned stands on medium to poor sites. (2st priority)
4). Second growth Fd stands that are <10 -20 years from harvest.(1st priority)
5). Fertilization within pruned stands may be done manually at time of pruning.

Candidate stands will be fertilized using nitrogen in the form of urea pellets applied at a rate of 435 kg/ha using aerial methods. Cw Hw salal sites will be fertilized using a nitrogen/phospherus blended mix. Post free growing fertilization activities are dependent on FRBC funding.

2.2) TIMBER QUALITY

It is expected at rotation, the average DBH of second growth stands will be in the 35 - 45 cm range. This is much smaller that the average DBH of many of the old growth stands currently being harvested. It is expected that many of these second growth stands will not have the same amount of clear (knot free) wood as the old growth. Although future markets can not be predicted with any certainty beyond five years, it is expected that some knot free wood will always be in demand.

Opportunities to Increase Timber Quality

Pruning can increase timber quality by minimizing the knotty core and providing clear wood.

Potential Treatments to Increase Timber Quality

Pruning: Stands will be assessed for potential pruning based on the following attributes:

1). Spaced stands composed primarily of Fd and Hw.
2). Concentrate pruning on sites with a high SI. (SI>25)
3). 1st lift pruning (3 metres) on stands that are on average at least 6 m tall.
4). 2nd lift pruning (5.6 m) on stands that are on average at least 10 metres tall.
5). Individual stem diameters should be less than 15 cm (DBH 1st lift and at 3 m height on 2nd lift)

Candidate stands should have between 400 and 600 sph pruned. 40% live crown will be retained on Hw, and a minimum of 3 whorls will be retained on Fd. Pruning activities are dependent on FRBC funding.

2.3) FOREST HEALTH

There have been a few minor forest health issues over the history of TFL 19. There are a few *Armillaria* root rot pockets scattered throughout, and the presence of *Pissodes strobi* has resulted in damage to some sitka spruce plantations. These concerns have been mitigated by planting resistant species in root rot areas, and minimizing the amount of spruce planted within the TFL. *Pissodes* resistant stock is available for planting from the Saanich Forestry Centre.

White Pine Blister Rust is present on second growth white pine. This concern has been mitigated by limiting the amount of white pine planted within the TFL, and by lower branch pruning. Blister rust resistant pine is available from the Saanich Forestry Centre.

Hemlock Dwarf Mistletoe is present on many old growth stands, but should not be a major concern in second growth, as it is addressed through regular and residual falling.

Elk browse on seedlings is a concern in several valleys within the TFL and is addressed by placing browse protectors over seedlings at time of planting.

Except for a small area of rehabilitation, there are no plans for FRBC funded health programs over the next five years. Forest health issues are monitored and control actions taken through regular silviculture surveys.

3.0) Non Timber Issues

3.1) Habitat Supply

A variety of wildlife species occurs within TFL 19. Notable large mammals include Roosevelt elk, black bear, black-tailed deer, and cougar. Smaller mammals such as raccoons, squirrels, and martens along with various species of birds are also found within the TFL. Various salmonids are present in many rivers and streams.

While habitat supply is not directly focused on during incremental silviculture activities, some benefits are being derived: Habitat for elk and deer browse within areas to be spaced and pruned will be maintained or possibly enhanced as a result of more light reaching the forest floor. The increase in light penetrating to the forest floor also provides increase berry production for bear browse.

During spacing or pruning activities, second growth trees with bird nests are left uncut or unpruned. In addition, willow and cascera (known elk browse) can be left uncut, or cut to encourage new regrowth.

Fertilizer free zones are left for a minimum of 10 metres along all observable water ways, and on all fish bearing streams. Cut trees, during spacing activities and pruned branches are removed from streams. These actions help maintain water quality in these water courses.

3.2) Job Outcomes

One of the main focus of FRBC funded projects within TFL 19 is to create local silviculture employment opportunities. Within TFL 19, several First Nations bands have been employed in carrying out juvenile spacing and pruning activities. Western Forest Products will continue to encourage the development of First Nation silviculture contractors through the award of silviculture contracts at market price to First Nations.

Year round employment in spacing and pruning is possible provided FRBC funding is available. Some down time is expected each year due to high fire hazard conditions, and heavy snowfall.

The following table lists expected productivity levels for various incremental programs:

Spacing: estimated productivity is 0.1 to 0.2 ha per person day of employment.

Pruning: estimated productivity is 0.1 ha per person day.

Fertilization: estimated productivity is 200ha/day (helicopter)

Back log Planting: estimated productivity is 1 to 2 ha/person day

Backlog Brushing: estimated productivity is 0.5 ha/person day (chemical) or 0.3 ha per person day (manual)

4.0) Historical Incremental Silviculture Activities

Juvenile spacing on TFL 19 has been ongoing since the mid 1970's. Fertilization of second growth stands has been occurring on the TFL since the early 1980's and pruning has been ongoing since the early 1990's. Most, if not all, the backlog (pre 1987 logging) areas have been reforested and brushing treatments completed where required.

The following table outlines the incremental activity carried out over the last seven years on TFL 19.

Year	Spacing	Pruning	Fertilization	Backlog Brushing	
2000	**256**	**233**		**958**	**46.0**
1999	303	117		764	0
1998	165	40		0	2.9
1997	163	111		0	158.2
1996	249	20		188	0
1995	226	39		0	167.4
1994	266	137		0	26.6

note: the values are expressed as hectares (ha) treated.

5.0) TABLES

See file SS2 tables 2002 2003 Van Region.

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at
http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** TFL 19

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

TFL 19
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities

Stand Tending

	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1400	900	800	800	800	33.00	46200	2
Spacing	150	150	150	150	150	1900.00	285000	1
Pruning	100	50	50	50	50	2300.00	230000	2
Fertilizing	1200	1500	1000	1000	1000	330.00	396000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	2850	2600	2000	2000	2000	335.86	957,200	
Planning and prescriptions							15,000	1
Total dollars							972,200	

Forest Health Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Riparian treatments	10	10	10	10	10	1,980.00	19800	2
Non-riparian treatments	50	50	50	50	50	1,900.00	95000	2
Totals hectares	60	60	60	60	60	1,913.33	114,800	

Domestic Range

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1400	900	800	800	800	33.00	46,200	
Spacing	150	150	150	150	150	1,899.99	285,000	
Pruning	100	50	50	50	50	2,299.98	230,000	
Fertilizing	1200	1,500	1,000	1,000	1,000	330.00	396,000	
Other stand tending activities	60	60	60	60	60	1,913.24	114800	
Totals hectares	2910	2600	2000	2000	2000	368.38	1,072,000	
Planning and prescriptions							15,000	
Studies funding							0	
Total dollars							1,087,000	

1/4/2006

TFL 19
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	150	50	50	0	0	33.00	4950	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	150	50	50	0	0	33.00	4,950	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							4,950	
Impeded areas								
Surveys	75	75	0	0	0	33.00	2475	1
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	75	75	0	0	0	33.00	2,475	
Prescriptions and planning dollars							0	
Total impeded areas							2,475	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	225	125	50	0	0	33.00	7425	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	225	125	50	0	0	33.00	7425	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							7,425	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

1/4/2006

TFL 19
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
TFL 19 Management Plan

The following default provincial factors may be replaced by management unit specific factors.

The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.77	0	0	0	2.9	0.41	0.25	0	0.46	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	
Provincial factors for estimated value gain at harvest							5-15%	15-30%	1-5%	
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

Area affected by tree improvement, seedling production and silviculture surveys

Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

Area		
Tree Improvement	Nursery Seedling Production	Silviculture Surveys

A Tree Improvement
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003
Backlog area planted from backlog table 0
Enter area of all other sites planted with improved trees 0
Total area affected by tree improvement 0

B Nursery production of seedlings
Enter sowing requests from SPAR 0

C Silviculture surveys
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.
These potentially provide improved estimates of site productivity and operational yield adjustment factors
Total EFP surveys from the EFP table 1,400
Total backlog surveys from the backlog table. 225
33% of all silviculture surveys 536

Optionally, you may provide a more exact estimate:
Estimate area of regen delay surveys
Estimate area of free growing surveys
Estimate area of pre-stand tending surveys
Estimate of total surveys that will affect timber supply (A) 0

Surveyed area that will affect timber supply 536
Replace with (A) if a more exact estimate is calculated

Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR)
Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003 0

Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas)
Estimate area that will be classified as free growing after a survey in 2002/2003 75

Habitat Supply
Help staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity.

TFL 19
Performance Measures Based on Activities Planned for 2002/2003
TFL 19 Management Plan

	Performance Measure	Tree Improve-ment	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	0	0	536	0	0	0	150	100	1,200	2,046	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	1	0	2,438	0	36,000		38,438
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			75								75
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	0	0	54	0	0	0	594	454	216	205	
3.3	Estimated total full time equivalent positions (FTE)	0	0	0	0	0	0	3	3	1	1	8
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											60
5.3	Est. area with secondary value provided to biodiversity (ha)											0

TFL 19
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	2,910	2,600	2,000	2,000	2,000	368	1,072,000
Planning, prescriptions and seedlings				0	0		15,000
Backlog Program Field Activities	225	125	50			33	7,425
Planning, prescriptions and seedlings							0
Totals	3,135	2,725	2,050	2,000	2,000		1,094,425

Performance Measures	
Potential total merchentable volume increment in 65 years	38,438 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	75 ha
Estimated total full time equivalent positions generated	8 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	60 ha
Estimated area with secondary value provided to biodiversity	0 ha

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): 19

Stand Tending	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)**	
Surveys	750	1400	86 7	1	2	33	33	0 0	more area ide entified for surveys and prescription development	
Spacing	195	150	-23 1	1	1	1980	1900	-4 0	less spacing and pruning, more dollars to be spent on fertilizationto produce wood quantity. Suffic	0
Pruning	195	100	-48 7	2	2	2420	2300	-5 0	Sufficient amount of spacing and pruning to meet emplc ployment goa als	
Fertilizing	500	1200	140 0	1	1	330	330	0.0		

Forest Health	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)**
Spacing	0	0	#DIV/0!	0	0	1980	n/a	#VALUE!	
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Habitat Supply/ Biodiversity									
Riparian	0	10	#DIV/0!	0	2	3000	1980	-34.0	New activity for 2002 based on recently completed wildlife assessments.
Non-Riparian	0	50	#DIV/0!	0	2	3000	1900	-36 7	New activity f for 2002 based on recently completed wildlife assessments

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): TFL 19

	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's *2002/2003* $/ha	% *difference*	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Legal Obligation									
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site preparation	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
B/L Reforestation									
Surveys		150	#DIV/0!	0	0	33	33	0.0	
Site Prep	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	

	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Impeded									
Surveys	200	75	-62.5	1	0	33	33	0.0	backlog activities nearing completion
brushing	20	0	-100	1	0	1155	n/a	#VALUE!	
Site Resoration									
Fill planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Rehab	0	0	#DIV/0!	0	0	2200	n/a	#VALUE!	
Reforestation	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	

Agency: Western Forest Products Limited
TFL: 19
TSA:

Communication Log for the Sustainable Harvest Objective 2002-2003
(also include community/stakeholder meetings to review silviculture strategies and SH plans)

Date	***Name (person contacted)***	***Representing***	***Communication Method***	***Comments/Issues***
Various dates	Bob Curr	MtLeighton Forestry Services. Mowachaht Muchalaht First Natuions	Personal conversation	Want continuous employment for their silviculture crew. 5-6 people
Monthly WFP-Ehattsesaht meetings	Tim John	Ehattsesaht First Nations	Personal conversation	Need more work for Band Members wanting to return to community Request silviculture work for 6 person crew.

Naka Tree Farm Licence 25
Sustainable Harvest
2002/03 – 2006/07
Resource Management Plan
Overview Document

June 2001

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4.0 Future Timber Supply
- 4.1 Timber Supply Quantity and Quality Improvement

5.0 Proposed Program

6.0 Other Considerations

Attachments

The following tables are provided for the listed Forest Districts and TFL Blocks:

Tables
- Enhanced Forestry
- Backlog Program
- Performance Measure
- Management Unit Summary
- SH Plan Comparison

TFL Blocks and Forest Districts
- TFL 25 Block 1 Jordan River – South Island Forest District
- TFL 25 Block 2 Loughborough Inlet – Campbell River Forest District
- TFL 25 Block 3 Naka Creek – Campbell River Forest District
- TFL 25 Block 5 Swanson Bay – Mid Coast Forest District
- TFL 25 Block 5 Swanson Bay – North Coast Forest District
- TFL 25 Block 6 Moresby – Queen Charlotte Forest District

Introduction

This document is submitted in response to the Ministry of Forests request for a Resource Management Plan. The background information is drawn from Management Plan 9 for Tree Farm License (TFL) 25 and Management Plan 7 for the former TFL 24. Draft Management Plan 10 for TFL 25 has been submitted to government and distributed for public review but has not been used in the preparation of this package. The Timber Supply Analysis which will support MP 10 as well as an FRBC funded Type I/II analysis is in progress. Target completion dates are Fall 2001 and Spring 2002 respectively.

The RMP covers two forest Regions (Vancouver and Prince Rupert) as well as two FRBC Regions (Pacific and Skeena/Bulkley). Block 5 of the TFL is split into North Coast Forest District and Mid Coast Forest District. The Block 1, 2, 5 and 6 portions of the RMP are administered from WFP's Mainland Islands Region office in Campbell River. Block 3 is administered from WFP's North Vancouver Island Region office in Port McNeill. The following table shows the Tenure/Forest District/WFP Region/FRBC Region splits.

Table 1 – TFL Regions and Districts

TFL Block	WFP Region	MoF Region	MoF District	FRBC Region
Block 1	Mainland/Islands	Vancouver	South Island	Pacific
Block 2	Mainland/Islands	Vancouver	Campbell River	Pacific
Block 3	North Vancouver Island	Vancouver	Campbell River	Pacific
Block 5	Mainland/Islands	Vancouver	Mid Coast	Pacific
Block 5	Mainland/Islands	Prince Rupert	North Coast	Skeena Bulkley
Block 6	Mainland/Islands	Vancouver	Queen Charlotte	Pacific

The text references TFL 25 as a whole but separate tables are provided for each combination of Forest District and TFL Block. No modifications were made to the SH spreadsheets provided with the RMP instruction package. Although they do not apply to all areas, no changes were made to the broad Performance Measures provided on these sheets as we did not have TSA or Type I/II data to justify adjustments.

1.0 Basic Data

1.1 Administrative Information

Western Forest Products Naka Tree Farm License 25 is made up of five 5 administrative units. Two are located on Vancouver Island, two on the Mainland coast between Stafford Inlet and Douglas Channel and one on Moresby Island in the Queen Charlottes. Moresby Tree Farm License 24 was consolidated into TFL 25 in 1998 as Block 6. At the same time the Port McNeill unit (Block 4) of TFL 25 was amended into TFL 6. As a result, TFL 25 has Blocks 1, 2, 3, 5 and 6.

Block #1 is a 31,000 ha unit located west of Sooke between the Strait of Juan de Fuca and the San Juan Ridge. This area has been managed as a separate sustained yield unit within the TFL since the TFL was granted in 1958. Block 1 has reasonable silviculture program costs as the area is accessible and close to a competitive "live at home" silviculture workforce.

Block #2 is a 66,645 ha unit located in Loughborough Inlet. There are three sub-units: Heydon Bay, Apple River and Frazer Bay/Stafford Lake. From 1958 to 1988 Blocks 2, 3, and 5 of the TFL were managed together as a sustained yield unit, with harvest concentrated in Blocks 2 and 3 rather than 5. As a result the Heydon Bay and Apple River sub-units are now primarily second growth with most of the conventional mature timber being found in the Frazer Bay/Stafford Lake sub-unit. Block 2 has high silviculture program costs as the area is remote, costly to access and requires either expensive camp accommodations or expensive temporary facilities. WFP also partners with the local First Nation on silviculture projects so costs are also slightly higher.

Block #3 is a 16,305 ha unit located on Vancouver Island about 50 km east of Port McNeill. As noted under Block 2, this unit was managed in conjunction with blocks 2 and 5 from 1958 to 1988. As harvest did not start in this unit until the mid-1970's, there is not as much immature area proportionate to mature timber as in Block 2. Silviculture program costs are moderate. While site access is good, the unit is remote from established communities and requires silviculture contractors to either set up temporary facilities on site or commute from either Sayward or Woss.

Block #5 is located on the mainland coast between Bella Bella and Gardiner Canal. From 1958 until 1988, this unit was managed in conjunction with units 2 and 3. As a result harvest rates were low, so there are limited second growth management opportunities. Silviculture program costs in this block are very high. Sites are remote, access is very expensive and silviculture contractors have to use expensive camp accommodations or set up temporary facilities. WFP also partners with the local First Nation on silviculture projects so costs are also slightly higher.

Block 6 is located on Moresby Island in the Queen Charlottes. This 53,360 ha unit was formerly Tree Farm License 24. The majority of the northernmost subunit (Moresby) of this Block is older second growth. Current harvest is concentrated in the Sewell Inlet subunit. Silviculture program costs in this Block are high due to remote location and expensive camp accomodations.

1.2 Land Area

The following table summarizes the total and operable area in the TFL 25 by Block as found in the approved management plans (TFL 25 and former TFL 24). The operability has been revisited for Management Plan 10 and is currently being compiled. Significant changes are not expected.

Table 2 – Total and Operable Areas

TFL Block	Total Area (ha)	Operable Forest Area (ha)
1	32,250	21,400
2	66,650	12,950
3	16,300	8,650
5	311,950	48,610
6	53,670	23,310
Summary	480,820	114,960

1.3 Annual Allowable Cut (AAC) and Harvest Forecast

The BC Chief Forester has determined that each TFL Block be managed as a sustained yield unit with it's own yield analysis and AAC. The current AAC and a range of long-run sustained yield harvest rates (LRSY) by block are as follows:

Table 3 – MP 9 AAC and LRSY

TFL Block	AAC	Commercial Thinning	LRSY
1	175,000	10,000	157,000-173,000
2	92,000		65,000
3	55,000		37-54,000
5	255,000		215,000
6	115,000		181-200,000

1.4 Site Class Profile

The site class breakdown by TFL Block is dependent on the site index method used in the individual timber supply analysis. TFL Blocks 1, 3, and 6 site classes are based on WFP's ecological mapping and permanent sample plots. Blocks 2 and 5 are based on Ministry of Forest's methodology. The MoF data will be updated once WFP has completed ecological classification of Block 5. The current site index assignments by TFL Block are as follows:

Table 4 – Operable Area

TFL Block	Operable Area by Site Class (ha)		
	Good	Medium	Poor
1	6,924.6	11,433.5	3,313.1
2	1,139.3	10,301.5	1,668.0
3	2,542.4	5,327.7	1,024.6
5	5,511.4	33,059.0	10,038.0
6	7,743.0	14,439.0	2,362.0

1.5 Age Class Profile

The age class profiles from the current management plan forest inventory (current to Jan. 1, 1995) for the operable forest land is as follows:

Table 5 – Age Class Distribution

TFL Block	Immature (1- 140 Years)	Mature (141+ Years)
1	74%	26%
2	50%	50%
3	34%	66%
5	9%	91%
6	71%	28%
Total TFL	40%	60%

Since 1995 approximately 4,350 ha of predominantly mature timber has been harvested which would reduce the mature to 56% and increase the immature to 44% of the operable area.

1.6 Species Profile

The species profile as of January 1, 1995 was as follows:

Table 6 – Species Distribution

Block	Douglas-Fir	Red and Yellow Cedar	Western Hemlock	Balsam	Spruce	Deciduous
1	45%	17%	33%	2%	0%	3%
2	4%	32%	48%	14%	0%	2%
3	2%	36%	56%	6%	0%	0%
5	0%	42%	36%	18%	2%	2%
6	0%	15%	46%	0%	30%	9%
TFL	10%	28%	45%	8%	6%	3%

Checks of harvested volume since January 1, 1995 indicate that the inventory has been harvested according to the profile.

2.0 Timber Supply Issues

2.1 Timber Quantity

The TFL 25 Management Plan 10 Timber Supply Analysis is in process and due for submission in the fall. The TSA will fully incorporate the Forest Practices Code as well as new protected or protection areas, and will use spatial modeling to project sustainable development. The previous Management Plan projected the following:

Block #1

The harvest in this unit is 175,000 m3/year in the first decade. This rate will decline marginally to between 160,000 and 173,000 by decade 19 depending on the management assumptions used. This block is in rapid transition to a second growth based harvest structure so the future flow of timber from the block can be positively affected by enhanced silviculture treatments.

Block #2

The harvest in this unit is 92,000 m^3/year in the first decade declining to 60-65,000 m^3/year in decade 5. Current and future harvest levels incorporate a significant helicopter volume. The high proportion of second growth in this unit means that the future flow of timber from the block can be positively affected by enhanced silviculture treatments.

Block #3

The harvest in decade one is 55,000 m^3/year declining in decade two to 49,000 m^3/year. There is a significant reserve of mature timber in this unit.

Block #5

The harvest is 255,000 m^3/year declining to a LRSY of 212,000 m^3/year in decade two. The sustainable harvest level in this unit has been negatively impacted by the creation of the Spirit Bear Protection Area. A significant proportion of the remaining volume in this unit is helicopter based.

Block #6

The approved harvest is 115,000 m^3/year declining to 98,800 m^3/year in decade two, remaining at that level until 2059 when second growth areas begin to reach maturity. The projected harvest level then begins to rise towards a LRSY of between 170,000 and 190,000 m3/year depending on management and landbase assumptions. This unit has a significant age class gap resulting from the establishment of the South Moresby National Park reserve. Enhanced silviculture has the potential to bring the current growth increment to merchantable size more quickly.

Forest policy and factors affecting harvest rates have changed since the Timber Supply Analysis supporting the current TFL 25 annual allowable cut was completed. There have been operational constraints as a result of the implementation of the Forest Practices Code, new direction provided by regional planning processes (CCLRMP and VISLUP) and new landscape level policies such as the Identified Wildlife Management Strategy and Landscape Unit Planning. Blocks 1 and 3 are affected by the VISLUP while Blocks 2 and 5 are subject to initial and future CCLRMP recommendations. Block 5 has been impacted by the declaration of the Spirit Bear Protection Area and will be further affected by the final form that Ecosystem Based Forest Management takes within the various Option Areas.

It is anticipated that these new factors will put downward pressure on the AAC options that will be provided as part of the Timber Supply Analysis.

2.2 Timber Quality

The last Timber Supply Analysis projected that the bulk of the harvest volume in the short to mid-term, would continue to come from mature forests. In the mid to long term, harvest volumes will depend on second growth. If projected rotations do not allow time for the development of quality characteristics such as small knots, clear wood and mature fibre, there could be a reduction in stand value not only on a cubic meter basis but also on a per hectare basis.

WFP's growth and yield work indicates that rotations can be extended without a significant impact on LRSY as long as there is a reasonable age class distribution. Longer rotations are proposed in order to produce stands with an average diameter in the 40 to 45 cm dbh range.

A timber quality analysis produced for the current TFL 25 Management Plan compared second growth log grades predicted by the model to produced log grades from second growth logging. The analysis indicated that it was possible to produce a second growth log grade profile similar to our experienced production from second growth stands if an average diameter of between 35 and 45 cm was targeted.

The TFL 25 analysis confirmed that by extending rotations it would be possible to produce these diameters and improve log grades. Overall, the minor loss in quantity from a longer rotation is more than offset by an increase in quality and future value.

The analysis concluded that there was only weak economic justification for silviculture treatments that increased second growth diameters when compared to the benefits of longer rotations, However, it did note that pruning would be necessary if there was a desire to produce the highest value grades.

2.3 Forest Health

There have been minor forest health and protection issues over the history of TFL 25. Block 1 has scattered *Phellinus* and *Armillaria* root rot pockets. The other TFL Blocks have insignificant *Armillaria* and no *Phellinus* issues.

The most visible insect pests have been the Black Headed Budworm on the Queen Charlotte Island and Vancouver Island and the Spruce Shoot Weevil on Vancouver Island and the Mainland. The budworm has appeared on a regular ten to fifteen year cycle and has caused significant defoliation but little mortality. Volume losses have been factored into AAC calculations through the use of growth and yield data which includes depressed growth during insect attacks. The Canadian Forest Service indicated that the current outbreak in Block 6 collapsed in 2000.

The Sitka Spruce Shoot Weevil restricts the area where Sitka Spruce can be regenerated. The Weevil is being addressed through WFP's Saanich Forestry Center Tree Improvement Program which is cooperating with MOF Breeders to produce and evaluate weevil resistant seed sources.

Hemlock Dwarf Mistletoe is common in mature forests but has not been debilitating to regenerating stands as long as the predominant silvicultural system has been clearcut or clearcut with reserves. As management moves to various levels of retention, the impact of mistletoe on developing stands may increase. In clearcut or clearcut with reserve areas, mistletoe is addressed through regular and residual falling.

Deer browse of young trees is a minor concern in Block 1 and a serious problem in Block 6. In Block 6 deer target western red cedar seedlings until they reach breast height. This issue is being addressed through seedling protection at the time of planting. There is also minor second growth damage caused by porcupines in Block 5.

There are no plans for FRBC funded pest control programs. Endemic health issues are monitored through regular silviculture surveys. Atypical pest outbreaks are monitored with special surveys.

2.4 Habitat Supply

Landscape Unit Planning processes are being discussed in most TFL Blocks. These processes have been very slow to get of the ground. Initial Landscape Unit Planning will establish Old Growth Management Areas and target Wildlife Tree retention percentages. Stand level biodiversity initiatives, including Wildlife Tree patches, are currently incorporated in harvest planning. A brief summary of habitat issues by supply block is listed below:

Block 1

Discussions with MoELP are ongoing to address potential needs for Marbled Murrelets and ungulate winter ranges.

Block 2

Ungulate winter range and mountain goat winter range issues have been identified in a number of locations. Grizzly Bear habitat may be an issue on certain sites, but will be addressed in new silviculture prescriptions through grizzly bear stocking standards and riparian reserves. A Total Resource Plan for all species has been prepared for this Block.

Block 3

No significant wildlife issues have been identified.

Blocks 5

A number of wildlife studies have been conducted by WFP in support of management planning. Grizzly Bear habitat may be an issue on certain sites in Block 5, but will be addressed in new silviculture prescriptions through grizzly bear stocking standards and riparian reserves. WFP has been supporting Kermode research in Block 5 to better understand the higher instance of this recessive trait in black bears in the area.

Block 6

A number of biodiversity or wildlife studies have been conducted by WFP on a watershed basis. A number of habitat modification projects have been proposed under the FRBC EEV program but none have been started.

To date the WFP Sustainable Harvest Program has not focussed on habitat supply issues. There are no plans to push the Habitat Supply Program until program direction and overlaps betweem the EEV and SH programs are clearer.

3.0 Enhanced Backlog and Intensive Silviculture

3.1 History

A summary of historical silviculture work on TFL 25 is attached in appendix 1.

3.2 Effect on Previous Timber Supply Analyses

Brushing

Brushing has been conducted as a routine treatment to maintain conifer dominance on sites. As such, the historic brushing program has had no effect on the timber supply.

Pre Commercial Thinning (PCT)

The TFL 25 MP 9 Analysis assumptions incorporated historical levels of PCT into the base case harvest determination. The analysis also conducted sensitivity analyses, thinning up to 50-75% of the available projected growing stock in several supply blocks (1, 2, 3). The general impact on timber supply harvest volume level was slightly negative or positive depending on the specific assumptions for a given TFL Block.

PCT benefits include favourable values and harvest costs associated with the larger piece sizes resulting from PCT. Blocks 2 and 6 have degrees of age class imbalance, which will additionally benefit from PCT. Economic analyses at the stand level in TFL Management Plan 9 indicated positive net present value from PCT on good sites.

Pruning

The TFL 25 Timber Supply Analysis did not model pruning as pruning targets wood quality rather than volume. The only comment was that higher log grades would not be possible without pruning however a cost/benefit analysis for this was not done.

Fertilization

Fertilization of second growth mixed stands of cedar and hemlock that are dominated by salal show significant growth increases. Fertilization will also add volume and value to PCT and CT.

Block 1 contains some cedar–hemlock-salal sites that are nutrient deficient and will benefit from fertilization. MP 9 modeling of fertilization of all projected PCT and CT in Block 1 demonstrated that harvest levels were maintained but not increased. Montane screening trials have been encouraging. It is proposed that further screening trials be established in this Block. There may be opportunities for late rotational fertilization prior to harvest in second growth stands.

Blocks 2 and 3 contain some cedar-hemlock-salal sites that are nutrient deficient and will benefit from fertilization as well as managed second growth stands that have been spaced and pruned.

Block 5 has not traditionally been considered a good area to fertilize due to poor access. WFP established fertilizer screen trials in this area in spring 2001.

Block 6 has been extensively foliar sampled and has demonstrated endemic nutrient deficiencies. PCT and fertilization in this block will contribute to alleviating age class imbalance. Open grown spruce stands in this block have heavy limbs which reduce log value. Small operational trials are proposed to see if wood quality can be improved with pruning.

4.0 Future Timber Supply

4.1 Timber Supply Quantity and Quality Improvement

Conventional backlog treatments or intensive treatments such as precommercial thinning or convention stand fertilization have little impact on LRSY as long as there is a manageable immature age class distribution. If forest management policies create an immature age class imbalance, these treatments can smooth but not increase overall harvest flows.

SCHIRP research indicates that fertilization of young hemlock/cedar stands to attain crown closure can have a positive effect on site productivity and harvest rates, especially if the treatments result in permanent growth effects. Fertilization of PCT or CT areas can capture the increase in growing space and compensate for potential volume impacts from PCT.

However, 'intensive' basic practices which decrease regeneration delay, increase site occupancy, hasten free-growing and green-up or permanently increase site productivity could have the greatest effect on long term yields. The volume forecasts which WFP growth and yield models use are reduced by approximately 20% to recognize operational factors that reduce stocking and final volume on an area basis. It would be possible to reduce this Operational Adjustment Factor (OAF) through genetic improvement and an aggressive stocking and brushing program. The issue of an 'enhanced' basic program has been raised in the past but never approved for implementation by the Ministry of Forests or FRBC. An "enhanced" basic program is not proposed as part of this RMP.

5.0 Proposed Program

The proposed sustainable harvest programs have been attached for each TFL Block and Forest District. These programs cover currently eligible impeded backlog and enhanced silviculture projects. The focus of the program is to first address backlog issues and then focus on enhanced opportunities. The enhanced program has two goals. The first is to provide employment opportunities to First Nations in areas of chronic under-employment. The second, in areas where under employment is not a significant issue, is to focus on treatments which will maximize volume production or address age class imbalances.

Silviculture studies are proposed under the SH envelope to continue work on native grass seed for revegetation purposes in Block 1 (South Island) and to monitor fertilization screening trials in block 5 (North Coast).

6.0 Other Considerations

The provincial enhanced silviculture program has historically had a social component. The employment and social values were given even greater importance under the initial FRBC mandate. To date licensee and government programs have ensured that a proportion of the silviculture program was directed to local communities and First Nations.

Western Forest Products is encouraging the development of local First Nations silviculture contractors through the award of silviculture contracts at market prices. It is our expectation that RMPs will be able to retain sufficient flexibility to incorporate these programs and partnerships into new programs.

Appendix I

TREE FARM LICENCE 25
Historical Summary of Activities

Year	Denuded (ha)	Planted (ha)	No. Trees Planted	Juvenile Spacing (ha)	Brushing (ha)	Prescribed Burning (ha)	Mechanical Site Prep. (ha)	Fertilization (ha)	Pruning (ha)	Commercial Thinning (ha)
Pre 1965	6062.8	2628.2	2531100	0.0	153.1	711.1	36.5	0.0	0.0	0.0
1965	884.4	346.4	298500	0.0	4.1	564.9	0.0	0.0	0.0	0.0
1966	999.9	458.5	432800	40.1	1.2	341.2	0.0	0.0	0.0	0.0
1967	798.3	577.4	547650	0.0	623.0	477.3	0.0	0.0	0.0	0.0
1968	727.4	630.2	645250	0.0	143.2	308.4	0.0	0.0	0.0	0.0
1969	766.3	607.7	446100	15.8	62.8	321.1	0.0	0.0	0.0	0.0
1970	741.6	418.8	341450	0.0	279.5	305.6	0.0	0.0	0.0	0.0
1971	834.7	671.3	586700	0.0	37.0	187.6	0.0	0.0	0.0	0.0
1972	918.5	290.6	295300	0.0	11.3	284.3	0.0	0.0	0.0	0.0
1973	1084.5	942.3	772450	239.8	320.8	199.0	0.0	0.0	0.0	16.2
1974	911.4	444.1	363850	224.6	0.0	761.3	0.0	0.0	0.0	0.0
1975	729.8	214.4	199450	0.0	2.8	32.0	0.0	0.0	0.0	0.0
1976	1143.7	902.5	807250	53.5	4.5	674.5	2.4	0.0	0.0	0.0
1977	824.1	876.8	757550	535.1	15.3	0.0	0.0	0.0	0.0	0.0
1978	978.4	626.0	555600	569.5	8.0	390.0	14.0	522.5	0.0	29.2
1979	838.3	922.6	749000	620.5	35.0	663.0	0.0	40.0	0.0	40.0
1980	829.5	586.7	493650	667.3	79.9	256.0	12.0	737.5	0.0	60.0
1981	650.4	924.1	803900	615.2	31.6	342.5	0.0	0.0	0.0	34.7
1982	787.2	851.8	827700	0.0	0.0	0.0	0.0	223.8	0.0	0.0
1983	1236.1	757.7	669050	161.2	186.7	290.5	0.0	0.0	0.0	0.0
1984	1180.3	846.6	809000	99.0	376.9	118.4	0.0	0.0	0.0	0.0
1985	1010.1	576.0	522050	322.4	716.0	109.0	0.0	0.0	0.0	0.0
1986	985.7	748.5	630950	335.7	614.5	489.9	6.9	0.0	4.5	0.0
1987	1213.6	1605.4	1297750	485.5	712.8	100.7	0.0	0.0	17.2	0.0
1988	1239.6	1249.5	982850	57.4	928.7	70.0	26.3	22.6	11.6	0.0
1989	773.0	1026.1	735600	325.7	1314.5	165.8	31.2	0.0	6.6	0.0
1990	1078.5	847.0	712350	433.4	974.1	107.4	0.0	0.0	38.9	0.0
1991	796.2	1157.8	842850	705.6	33.1	38.4	0.0	0.0	3.2	0.0
1992	834.8	820.2	673900	869.0	2.1	19.0	0.0	1304.0	38.0	0.0
1993	907.6	733.1	639750	231.5	111.5	16.4	0.0	0.0	47.3	0.0
1994	1020.0	652.0	546000	511.5	338.7	9.5	38.1	0.0	157.8	0.0
1995	776.5	897.2	853050	721.4	515.1	48.5	0.0	581.4	308.6	0.0
1996	924.2	1103.8	1089750	319.8	168.9	0.0	8.5	1947.2	165.0	16.2
1997	850.5	904.9	951900	483.2	269.0	21.5	3.6	1061.9	313.9	25.0
1998	448.4	635.2	652250	404.5	440.7	0.0	10.0	0.0	236.1	26.4
1999	619.4	358.1	413000	234.3	143.7	0.0	14.8	2641.3	136.0	0.0
2000	734.6	744.2	752500	211.9	52.9	11.6	7.1	0.0	144.1	0.0
TOTAL	38140.3	29583.7	26229800	10494.4	9713	8436.4	211.4	9082.2	1628.8	247.7

- Historical Summary amended to remove the former TFL 25 Block 4 and include the former TFL 24.

Appendix I

TREE FARM LICENCE 25
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- Historical Summary amended to remove the former TFL 25 Block 4 and include the former TFL 24.

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** Naka Tree Farm Licence 25 Block 2

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

Naka Tree Farm Licence 25 Block 2
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	500	0	0	0	0	50.00	25000	1
Spacing	0	0	0	0	100	0.00	0	
Pruning	40	0	0	0	0	3000.00	120000	2
Fertilizing	0	300	0	0	0	0	0	
Other	0	0	0	0	0	0.00	0	
Totals hectares	540	300	0	0	100	268.52	145,000	
Planning and prescriptions							13,525	1
Total dollars							158,525	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	500	0	0	0	0	50.00	25,000	
Spacing	0	0	0	0	100	0.00	0	
Pruning	40	0	0	0	0	2,999.93	120,000	
Fertilizing	0	300	0	0	0	#DIV/0!	0	
Other stand tending activities	0	0	0	0	0	0.00	0	
Totals hectares	540	300	0	0	100	268.51	145,000	
Planning and prescriptions							13,525	
Studies funding							0	
Total dollars							158,525	

Naka Tree Farm Licence 25 Block 2
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	
Impeded areas								
Surveys	30	0	0	0	0	50.00	1500	1
Brushing	30	0	0	0	0	1,200.00	36000	2
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	60	0	0	0	0	624.99	37,500	
Prescriptions and planning dollars							3,850	1
Total impeded areas							41,350	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	30	0	0	0	0	50.00	1500	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	30	0	0	0	0	1,199.96	36000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	60	0	0	0	0	624.89	37500	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							3,850	
Recommended studies							0	
Total backlog program							41,350	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Naka Tree Farm Licence 25 Block 2
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP.
Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.

The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.77	0	0	0	2.9	0.41	0.25	0	0.46	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	
Provincial factors for estimated value gain at harvest							5-15%	15-30%	1-5%	
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys

Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	Nursery Seedling Production	Silviculture Surveys
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	0		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	0		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			500
Total backlog surveys from the backlog table.			30
33% of all silviculture surveys			175
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply (A)			0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			175
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity.

Naka Tree Farm Licence 25 Block 2
Performance Measures Based on Activities Planned for 2002/2003
Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	0	0	175	0	0	30	0	40	0	245	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	1	800	0	0	0		800
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	0	0	17	0	0	78	0	182	0	24	
3.3	Estimated total full time equivalent positions (FTE)	0	0	0	0	0	0	0	1	0	0	2
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											0
5.3	Est. area with secondary value provided to biodiversity (ha)											0

Naka Tree Farm Licence 25 Block 2
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	540	300	0	0	100	269	145,000
Planning, prescriptions and seedlings							13,525
Backlog Program Field Activities	60	0	0	0	0	625	37,500
Planning, prescriptions and seedlings							3,850
Totals	600	300	0	0	100		199,875

Performance Measures

Potential total merchentable volume increment in 65 years	800 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	2 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	0 ha
Estimated area with secondary value provided to biodiversity	0 ha

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): Naka TFL 25 Block 2

Stand Tending	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	0	500	#DIV/0!	1	1	33	50	51.5	2001/02 work deferred to 2002/03, heli access
Spacing	0	0	#DIV/0!	0	0	1980	0	-100.0	NA
Pruning	0	40	#DIV/0!	0	2	2420	3000	24.0	2004/05 work available in 2002/03. Remote camp location. FN partnership
Fertilizing	0	0	#DIV/0!	0	0	330	0	-100.0	NA

Forest Health	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)
Spacing	0	0	#DIV/0!	0	0	1980	0	-100.0	
Pruning	0	0	#DIV/0!	0	0	2420	0	-100.0	
Habitat Supply/ Biodiversity									
Riparian	0	0	#DIV/0!	0	0	3000	0	-100.0	
Non-Riparian	0	0	#DIV/0!	0	0	3000	0	-100.0	

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): Naka TFL 25 Block 2

Legal Obligation	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site preparation	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
B/L Reforestation									
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site Prep	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
Impeded	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)**
Surveys	0	30	#DIV/0!	0	1	33	50	51.5	Remote - Helicopter and boat access to sites.
brushing	0	30	#DIV/0!	0	2	1155	1200	3.9	
Site Rescoration									
Fill planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Rehab	0	0	#DIV/0!	0	0	2200	n/a	#VALUE!	
Reforestation	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** Naka Tree Farm Licence 25 Block 3

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

Naka Tree Farm Licence 25 Block 3
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	50	250	50	50	50	40.00	2000	1
Spacing	20	20	20	20	20	2250.00	45000	1
Pruning	30	30	30	30	30	2450.00	73500	1
Fertilizing	0	200	0	0	0	0.00	0	
Other	0	0	0	0	0	0.00	0	
Totals hectares	100	500	100	100	100	1204.98	120,500	
Planning and prescriptions							11,800	1
Total dollars							132,300	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	50	250	50	50	50	40.00	2,000	
Spacing	20	20	20	20	20	2,249.89	45,000	
Pruning	30	30	30	30	30	2,449.92	73,500	
Fertilizing	0	200	0	0	0	0.00	0	
Other stand tending activities	0	0	0	0	0	0.00	0	
Totals hectares	100	500	100	100	100	1,204.90	120,500	
Planning and prescriptions							11,800	
Studies funding							0	
Total dollars							132,300	

1/4/2006

Naka Tree Farm Licence 25 Block 3
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	40	40	40	40	40	40.00	1600	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	40	40	40	40	40	40.00	1,600	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							100	1
Total backlog reforestation							1,700	
Impeded areas								
Surveys	0	10	0	10	0	0.00	0	
Brushing	0	10	0	10	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	20	0	20	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	40	50	40	50	40	40.00	1600	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	10	0	10	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	40	60	40	60	40	39.99	1600	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							100	
Recommended studies							0	
Total backlog program							1,700	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Naka Tree Farm Licence 25 Block 3
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.77	0	0	0	2.9	0.41	0.25	0	0.46	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	
Provincial factors for estimated value gain at harvest							5-15%	15-30%	1-5%	
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	**Nursery Seedling Production**	**Silviculture Surveys**
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	0		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	0		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			50
Total backlog surveys from the backlog table.			40
33% of all silviculture surveys			30
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply		(A)	0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			30

Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR)
Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003

Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas)
Estimate area that will be classified as free growing after a survey in 2002/2003

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity.

Naka Tree Farm Licence 25 Block 3
Performance Measures Based on Activities Planned for 2002/2003
Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	0	0	30	0	0	0	20	30	0	80	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	1	0	325	0	0		326
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	0	0	3	0	0	0	79	136	0	8	
3.3	Estimated total full time equivalent positions (FTE)	0	0	0	0	0	0	0	1	0	0	1
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											0
5.3	Est. area with secondary value provided to biodiversity (ha)											0

Naka Tree Farm Licence 25 Block 3
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	100	500	100	100	100	1,205	120,500
Planning, prescriptions and seedlings							11,800
Backlog Program Field Activities	40	60	40	60	40	40	1,600
Planning, prescriptions and seedlings							100
Totals	140	560	140	160	140		134,000

Performance Measures

Potential total merchentable volume increment in 65 years	326 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	1 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	0 ha
Estimated area with secondary value provided to biodiversity	0 ha

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): Naka TFL 25 Block 3

Stand Tending	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	50	50	0.0	1	1	33	40	21.2	Poor Access. No accomodations.
Spacing	20	20	0.0	1	1	1980	2250	13.6	NA
Pruning	30	30	0.0	1	1	2420	2450	1.2	NA
Fertilizing	0	0	#DIV/0!	0	0	330	0	-100.0	

Forest Health	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)
Spacing	0	0	#DIV/0!	0	0	1980	0	-100.0	
Pruning	0	0	#DIV/0!	0	0	2420	0	-100.0	
Habitat Supply/ Biodiversity									
Riparian	0	0	#DIV/0!	0	0	3000	0	-100.0	
Non-Riparian	0	0	#DIV/0!	0	0	3000	0	-100.0	

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): Naka TFL 25 Block 3

Legal Obligation	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site preparation	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
B/L Reforestation									
Surveys	40	40	0	1	1	33	40	21.2	Poor Access. No Accomodations.
Site Prep	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	

Impeded	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
Site Resoration									
Fill planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Rehab	0	0	#DIV/0!	0	0	2200	n/a	#VALUE!	
Reforestation	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	

WEYERHAEUSER COMPANY LIMITED

Tree Farm Licence 39

Sustainable Harvest RMP for 2002/2003

June, 2001

Prepared by:

Renewal Investment Corp.
Suite 3, 730 – 13th Avenue
Campbell River, BC
V9W 4H1

(250) 286-3323

Weyerhaeuser Company Limited
Sustainable Harvest RMP 2002/2003
TFL 39

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Executive Summary

This report describes a Type 2 timber supply analysis of incremental silviculture opportunities in TFL 39, held by Weyerhaeuser Company Ltd. The analysis uses the Forest Service Simulator (FSSIM) to assess interactions between silviculture and timber supply. The analysis assumes static, current conditions for relative timber values and social use of the forest.

The analysis inspects a broad range of incremental silviculture treatments, as identified at two workshops held with Forest Renewal BC, Ministry of Forests and Weyerhaeuser foresters. Specific treatments and treatment combinations (regimes) are tested for their ability to meet timber quality, harvest level, and wildlife habitat objectives. Some treatments are found to have negative impacts, while others are substantially positive. Table 9 provides a ranking of the treatment alternatives.

The analysis demonstrates that if all identified suitable forest areas were treated according to discussions at the workshop and corresponding assumptions in the analysis, $16.1 million might be spent annually in TFL 39 on incremental silviculture activities. From among these candidate investments, a recommended silviculture program with a budget of $3.8 million is presented in Table 11. This budget level is a 25% increase from recent silviculture levels in TFL 39.

Investment of $3.8 million will increase future harvest levels by 3.4%, or 114,000 m^3/yr. The investment will also improve visual scenery values. Approximately 15% of the budget is allocated to wildlife habitat restoration. Incremental silviculture activities will directly create an estimated 35 full time equivalent jobs. Increased harvest levels will result in 210 direct and indirect jobs within 20 years and 480 jobs in the longer term. Including income taxes and stumpage fees, government will realize a return of $7.8 million from the investment.

There are many uncertainties inherent in such an analysis, including stand responses to silviculture, selection of appropriate treatment areas, and economic assumptions projected over long time horizons. The analysis attempts to make reasonable estimates within the scope of the existing information.

Weyerhaeuser Company Limited, TFL 39
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on Type 1, Type 2 silviculture strategy & Provincial Default Values

The following default provincial factors may be replaced by management unit specific factors.

The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)

Estimates of annual growth rate increase from each type of treatment over no treatment.

Potential volume/ha gain (m3/ha/yr) provincial factors:

0.71	0	0	0	2.9	0.63	0	0	0.42

Years the factor will affect:

65	65	65	65	65	65	65	65	65

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

Provincial factors for estimated value gain at harvest

5-15%	15%	5%

3) Corporate commitment to employment

Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

Est. short term employment rate (person days/ha) provincial factors:

0.1	0.34	0.1	1.5	2	2.43	4.14	5.5	0.18	0.1

RENEWAL INVESTMENT CORP.

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June 19, 2001

RMP 2002/03, Supporting Documentation: Weyerhaeuser Operations (blocks 2 and 5) within Campbell River Forest District

The Type 2 timber supply analysis of incremental silviculture opportunities in TFL 39, prepared March, 2001 and the draft Management Plan # 8 provided the guidance in preparing this RMP.

The following provides a summary of how the recommended silviculture program from the Type 2 analysis will be implemented:

WRP –MOELP Program

Riparian Treatment

There is still the legal obligation to carry out the required treatments prescribed in SMPs #1 and 2, located within the riparian reserve zones of Big Tree and Spirit creeks. The goal is to promote stand level biodiversity, future coarse woody debris, and bank stability for enhancement of anadromous fish habitat. To-date riparian restoration has included alder overstory removal (1999), conifer establishment in 1999 and 2000, and brushing in 2001. Ongoing manual brushing and possibly some fill-planting will be required to ensure the target conifer density is establish and reaches free growing.

Backlog Program

Surveys

The anticipated area requiring free growing surveys and brushing assessments is 200 ha for 2002/03. The free growing surveys are targeted for completion in 2001/02; however, some remnant, brushing and free growing surveys, and other miscellaneous assessments of ongoing projects (i.e. backlog SPs obligations) will be required to ensure all backlog obligations are addressed. Brushing was given the highest ranking with the Type 2 analysis.

Planting

Backlog planting has virtually been eliminated. It is difficult to find NSR areas where cost/benefit analysis suggests a worthy investment. However, some areas might be discovered through the 2001/02 free growing surveys; therefore, 5 ha per year will be scheduled for 2002/03 and 2003/2004, with no further scheduling in the last 3 years.

Brushing

It is increasingly difficult to find suitable areas requiring brushing or alder girdling, as most of these backlog areas have been treated. Some areas might be discovered through the 2001/02 free growing surveys; therefore, 20 ha per year will be scheduled for 2002/03 and 2003/2004, with no further scheduling in the last 3 years.

Enhanced Program

Habitat Supply and Biodiversity Enhancement

Reinhard Muller RPF, RBio, has field reviewed and analyzed maps and found +/- 450 ha of riparian variable density spacing within block 2. Over the last 2 years and by the completion of this year there will be approximately 284 ha treated; leaving166 ha to complete of the next year few years. This will complete the suitable areas 13-35 years old in riparian reserve zones, in watersheds that have fisheries values.

Upland deer forage habitat creation will be phased in at over the next 5 years, which will ease the cessation of the riparian habitat enhancement projects. Riparian enhancement spacing was given a high ranking with the Type 2 analysis with the anticipation that landscape unit planning process will display this activity has a positive effect on timber supply.

Surveys

Enhanced surveys of 3200 hectares per year will be needed to locate the annual treatment area (1625 ha) for enhanced activities of spacing, pruning, riparian enhancement, and fertilization activities. This estimate is based on historic survey levels and the anticipation that approximately double the net annual treatment area will require surveying through reconnaissance and plot surveys to find the highest priority areas suitable for treatment.

Spacing

Approximately 185 ha of spacing (block 2 – 150 ha, block 5 – 35 ha) is anticipated within 3 spacing regimes priorized, as per the Type 2 analysis:

1. Species conversion for intensive Fdc management. At approximately 14 years of age Fdc plantations will be juvenile space to remove the hemlock trees that have naturally seeded in. The typical regime will be space stands

with a SI> 27m to 1200 sph. Follow with fertilization and possibly pruning. Most of the target stands over the next few years will come from appraisal stands recently declared free growing. Red cedar will also be a favoured species within this regime.

2. In the transition zone for the balsam wooly adelgid conduct sanitation spacing to promote alternative species where aphid infestation is anticipated. Space stands < 30 years-old to remove Abies amabilis (balsam) and favour ecologically suitable alternative species such as Cw, Yc, Hw, and Fdc. Candidate stands must have at least 900 well-spaced healthy alternative species per hectare.
3. Space hemlock stands >8,000 sph with SI > 27m to densities of 1200-1500 sph. With this regime also favour alternative species such as Cw and Fdc. Target stands over the next few years will come from appraisal stands recently declared free growing.

Pruning

Pruning goals are 20 hectares per year with a target pruning density of 800 sph and ranked as follows:

1. Previously 1st lift pruned Douglas-fir
2. Spaced Douglas-fir stands with 800sph on good and high sites.
3. Pruning of planted roadside Douglas-fir strata will also be investigated. Co-ordinate with mechanical roadside fertilization.

Pruning is considered a low priority in the Type 2 analysis.

Fertilization

The focus of the 1300 ha program will be late rotation fertilization of Douglas-fir stands with a three-time fertilizer boost before final harvest. Fertilization priority is:

1. Douglas fir stands with site index >27 scheduled for harvest with 7-10 years will be targeted primarily.
2. Fdc stands 14 years from harvest, that could be fertilized in two passes.
3. Fdc stands 21 years from harvest that could be fertilized within three passes.
4. Manual fertilization of Fdc and Cw during spacing and mechanical roadside fertilization (within 50m of roadbed) will be investigated.

Studies and Funding

Fertilization regimes for various stand compositions and for stands impaired by salal will be studied at an estimated cost of $28,000.

STUDY Outline

Short Description of Study	Fertilization responses of juvenile western hemlock to N, P, and S
Background / Justification	Previous studies have demonstrated great variability in the growth responses of western hemlock to fertilization with N. Some evidence, mainly from short-term screening trials, suggests that the responses to fertilization with N can be improved when other elements, particularly P, are also added. Fertilization responses may also be greater in young, spaced stands and on certain site types. Conventional plot trials are required to determine the effects of fertilization on stand growth and yield and timber supply and to assess the economics of such treatments. Western hemlock represents a significant portion of the allowable cut in coastal B.C.; hence, information relating to the responses of hemlock is important.
Methods & Procedures	The trials were established in 1999 and first-year responses have been previously reported. Third-year measurements must be conducted during winter 2002-2003.
Lead Contact for Study	Jeff Sanford, Nanaimo Woodlands, Weyerhaeuser
Key partners affected by this issue	Weyerhaeuser, Ministry of Forests (Kevin Brown, MOF Research Branch), and all coastal Licensees with managing Hw stands.
Temporal Scale of importance (how urgent is this?)	Stands were not measured in 2nd year (2001). Re-measurement in 4th year is critical to study.
Spatial Scale (small vs wide reaching impacts)	Wide reaching impacts throughout the Vancouver Forest Region
Link to Resource Management Plans, Timber Supply Review, higher level plans	TFL 39 Timber Supply Analysis - Silviculture Type 2 Analysis

Strategic Objectives: (tick all that apply)	**SH**[1]	**EEV**	**SSFM**	**C&I**	**VA**[2]	**WF**
	X					

Region: Pacific **Study (Y/N): Y**	**Mgmt. Unit: TFL 39**
Date: June 25, 2001 **or Research (Y/N): N**	**$ to Complete 28,000**
Proponent: Weyerhaeuser	**Workplan #: PAM01507**
Number of year to complete: 2	**Activity Location#:**

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[1] SH = Sustainable Harvest EEV = Enhance Environmental Values SSFM = Strengthen Sustainable Forest Management C&I = Criteria and Indicators of Sustainability VA = Value Added CO = Communities WF = Workforce

[2] We will include needs for these strategic objectives if identified but will not ask specifically for these needs.

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here**: TFL 39 - Weyerhaeuser Company Ltd.

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

TFL 39 - Weyerhaeuser Company Ltd.
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	5530	5480	5480	5480	5480	34.38	190125	1&2
Spacing	415	465	465	465	465	1913.98	794300	2
Pruning	60	60	60	60	60	2433.29	146000	3
Fertilizing	2250	2250	2250	2250	2250	380.67	856500	1
Other	15	15	15	15	15	5331.91	80000	1
Totals hectares	8270	8270	8270	8270	8270	249.93	2,066,925	
Planning and prescriptions	0	0	0	0	0		91500	1&2
Total dollars							2,158,425	
Forest Health Enhancement								
Spacing	50	50	50	50	50	1,799.86	90000	2
Pruning	50	50	50	50	50	2,419.81	121000	2
Other treatments	500	500	500	500	500	50.00	25000	2
Totals hectares	600	600	600	600	600	393.33	236,000	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	280	185	90	90	90	3,000.00	840000	1
Non-riparian treatments	0	95	150	150	150	0.00	0	
Totals hectares	280	280	240	240	240	2,999.95	840,000	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	5530	5480	5480	5480	5480	34.38	190,125	
Spacing	465	515	515	515	515	1,901.70	884,300	
Pruning	110	110	110	110	110	2,427.16	267,000	
Fertilizing	2250	2,250	2,250	2,250	2,250	380.67	856,500	
Other stand tending activities	795	795	755	755	755	1,188.65	945000	
Totals hectares	9150	8355	8355	8355	8355	343.49	3,142,925	
Planning and prescriptions							91,500	
Studies funding	Fert Regimes $28k, B/H Budworm $50k, Deer Browse $10k						88000	1&2
Total dollars							3,322,425	

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TFL 39 - Block 1 - Sunshine Coast District
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	950	950	950	950	950	37.50	35625	1
Spacing	50	50	50	50	50	1980.00	99000	2
Pruning	20	20	20	20	20	2420.00	48400	3
Fertilizing	500	500	500	500	500	330.00	165000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	1520	1520	1520	1520	1520	228.96	348,025	
Planning and prescriptions							7,500	1
Total dollars							355,525	
Forest Health Enhancement								
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	40	40	40	40	40	3,000.00	120000	1
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	40	40	40	40	40	2,999.93	120,000	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	950	950	950	950	950	37.50	35,625	
Spacing	50	50	50	50	50	1,979.96	99,000	
Pruning	20	20	20	20	20	2,419.88	48,400	
Fertilizing	500	500	500	500	500	330.00	165,000	
Other stand tending activities	40	40	40	40	40	2,999.70	120000	
Totals hectares	1560	1520	1520	1520	1520	300.01	468,025	
Planning and prescriptions							7,500	
Studies funding							0	
Total dollars							475,525	

TFL 39 - Blocks 2&5 - Campbell River District
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities

Stand Tending

	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	3200	3200	3200	3200	3200	33.00	105600	1
Spacing	185	185	185	185	185	1980.00	366300	2
Pruning	20	20	20	20	20	2420.00	48400	3
Fertilizing	1300	1300	1300	1300	1300	330.00	429000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	4705	4705	4705	4705	4705	201.76	949,300	
Planning and prescriptions							60,000	1
Total dollars							1,009,300	

Forest Health Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Riparian treatments	120	45	0	0	0	3,000.00	360000	1
Non-riparian treatments	0	75	120	120	120	0.00	0	
Totals hectares	120	120	120	120	120	2,999.98	360,000	

Domestic Range

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	3200	3200	3200	3200	3200	33.00	105,600	
Spacing	185	185	185	185	185	1,979.99	366,300	
Pruning	20	20	20	20	20	2,419.88	48,400	
Fertilizing	1300	1,300	1,300	1,300	1,300	330.00	429,000	
Other stand tending activities	120	120	120	120	120	2,999.90	360000	
Totals hectares	4825	4705	4705	4705	4705	271.36	1,309,300	
Planning and prescriptions							60,000	
Studies funding	Fertilization Regimes						28000	1
Total dollars							1,397,300	

TFL 39 - Blocks 3&4 - Port McNeill District
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1000	1000	1000	1000	1000	33.00	33000	1
Spacing	60	60	60	60	60	1650.00	99000	2
Pruning	10	10	10	10	10	2420.00	24200	3
Fertilizing	350	350	350	350	350	550.00	192500	1
Other	15	15	15	15	15	5333.33	80,000	1
Totals hectares	1435	1435	1435	1435	1435	298.75	428,700	
Planning and prescriptions							20,000	1
Total dollars							448,700	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	30	10	0	0	0	3,000.00	90000	1
Non-riparian treatments	0	20	30	30	30	0.00	0	
Totals hectares	30	30	30	30	30	2,999.90	90,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	1000	1000	1000	1000	1000	33.00	33,000	
Spacing	60	60	60	60	60	1,649.97	99,000	
Pruning	10	10	10	10	10	2,419.76	24,200	
Fertilizing	350	350	350	350	350	550.00	192,500	
Other stand tending activities	45	45	45	45	45	3,777.53	170000	
Totals hectares	1465	1420	1420	1420	1420	354.06	518,700	
Planning and prescriptions							20,000	
Studies funding							0	
Total dollars							538,700	

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TFL 39 - Block 7 - Mid Coast District
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	80	80	80	80	80	75.00	6000	2
Spacing	20	20	20	20	20	2500.00	50000	2
Pruning	10	10	10	10	10	2500.00	25000	3
Fertilizing	0	0	0	0	0	0.00	0	
Other	0	0	0	0	0	0.00	0	
Totals hectares	110	110	110	110	110	736.35	81,000	
Planning and prescriptions							4,000	2
Total dollars							85,000	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	10	10	10	10	10	3,000.00	30000	1
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	10	10	10	10	10	2,999.70	30,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	80	80	80	80	80	75.00	6,000	
Spacing	20	20	20	20	20	2,499.88	50,000	
Pruning	10	10	10	10	10	2,499.75	25,000	
Fertilizing	0	0	0	0	0	0.00	0	
Other stand tending activities	10	10	10	10	10	2,998.80	30000	
Totals hectares	120	110	110	110	110	924.95	111,000	
Planning and prescriptions							4,000	
Studies funding							0	
Total dollars							115,000	

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TFL 39 - Block 6 - Queen Charlottes District
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	300	250	250	250	250	33.00	9900	1
Spacing	100	150	150	150	150	1800.00	180000	2
Pruning	0	0	0	0	0	0.00	0	
Fertilizing	100	100	100	100	100	700.00	70000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	500	500	500	500	500	519.80	259,900	
Planning and prescriptions							0	
Total dollars							259,900	

Forest Health Enhancement

Spacing	50	50	50	50	50	1,800.00	90000	2
Pruning	50	50	50	50	50	2,420.00	121000	2
Other treatments	500	500	500	500	500	50.00	25000	2
Totals hectares	600	600	600	600	600	393.33	236,000	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	80	80	40	40	40	3,000.00	240000	1
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	80	80	40	40	40	2,999.96	240,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	300	250	250	250	250	33.00	9,900	
Spacing	150	200	200	200	200	1,800.00	270,000	
Pruning	50	50	50	50	50	2,419.95	121,000	
Fertilizing	100	100	100	100	100	700.00	70,000	
Other stand tending activities	580	580	540	540	540	456.89	265000	
Totals hectares	1180	600	600	600	600	623.64	735,900	
Planning and prescriptions							0	
Studies funding	(Blackheaded Budworm $50K, Deer Browse $10K)						60000	2
Total dollars							795,900	

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TFL 39 - Weyerhaeuser Company Ltd.
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	189	136	96	96	76	48.47	9161	1
Site preparation	5	5	5	5	5	1,648.68	8250	1
Planting	23	20	0	0	0	1,911.06	43960	1
Brushing	56	30	46	20	0	1,150.81	64449	1
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	273	191	147	121	81	460.85	125,820	
Seed purchase	15600	12000	0	0	0	0.50	7800	1
Total legal obligations							133,620	
Backlog Reforestation								
Surveys	4450	1900	1200	1200	1200	36.07	160500	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	70	70	50	50	60	1,805.69	126400	1
Brushing	540	525	155	150	150	1,196.66	646200	1
Totals hectares	5060	2495	1405	1400	1410	184.41	933,100	
Seed purchase	48000	36000	30000	30000	30000	0.56	27000	1
Prescriptions and planning dollars							30500	1
Total backlog reforestation							990,600	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	30	30	30	30	30	1,154.88	34650	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	30	30	30	30	30	1,154.50	34,650	1
Prescriptions and planning dollars							3500	
Total impeded areas							38,150	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	20	20	10	0	0	2,199.56	44000	1
Reforestation	20	20	20	20	20	1,319.74	26400	2
Totals hectares	40	40	30	20	20	1,759.43	70,400	
Seed purchase	18000	12000	12000	12000	12000	0.50	9000	2
Prescriptions and planning dollars							5000	1
Total site restoration							84,400	
Backlog Program Activities - Management Unit Total								
Surveys	4639	2036	1296	1296	1276	36.57	169661	
Site preparation	25	25	15	5	5	2,088.91	52250	
Planting	113	110	70	70	80	1,741.04	196760	
Brushing	626	585	231	200	180	1,190.56	745299	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	5403	2756	1612	1571	1541	215.43	1163970	
Seed purchase	81600	60000	42000	42000	42000	0.54	43800	
Prescriptions and planning							39,000	
Recommended studies	Retubing Study $20k QCI						20000	2
Total backlog program							1,266,770	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

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TFL39 - Block 1 - Sunshine Coast District
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	50	10	20	20	0	75.00	3750	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	3	0	0	0	0	1,320.00	3960	1
Brushing	30	30	20	20	0	1,155.00	34650	1
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	83	40	40	40	0	510.35	42,360	
Seed purchase	3600	0	0	0	0	0.50	1800	
Total legal obligations							44,160	
Backlog Reforestation								
Surveys	450	250	0	0	0	40.00	18000	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	10	10	0	0	10	1,320.00	13200	1
Brushing	40	20	0	0	0	1,155.00	46200	1
Totals hectares	500	280	0	0	10	154.80	77,400	
Seed purchase	12000	0	0	0	0	0.50	6,000	
Prescriptions and planning dollars							6,000	1
Total backlog reforestation							89,400	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	20	20	10	0	0	2,200.00	44000	1
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	20	20	10	0	0	2,199.78	44,000	
Seed purchase	6,000	0	0	0	0	0.50	3,000	
Prescriptions and planning dollars							5,000	1
Total site restoration							52,000	
Backlog Program Activities - Management Unit Total								
Surveys	500	260	20	20	0	43.50	21750	
Site preparation	20	20	10	0	0	2,199.78	44000	
Planting	13	10	0	0	10	1,319.80	17160	
Brushing	70	50	20	20	0	1,154.98	80850	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	603	340	50	40	10	271.57	163760	
Seed purchase	21600	0	0	0	0	0.50	10800	
Prescriptions and planning							11,000	
Recommended studies							0	
Total backlog program							185,560	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

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TFL39 - Blocks 2&5 - Campbell River District
Backlog Program Table
For the 2002/03 Fiscal Year

Activities

Legal Obligations

	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	26	26	26	26	26	32.73	851	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	26	0	26	0	0	1,146.12	29799	1
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	52	26	52	26	26	589.39	30,650	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							30,650	

Backlog Reforestation

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	200	150	100	100	100	33.00	6600	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	5	5	0	0	0	1,320.00	6600	1
Brushing	0	5	5	0	0	0.00	0	
Totals hectares	205	160	105	100	100	64.39	13,200	
Seed purchase	6000	6000	0	0	0	1.00	6,000	1
Prescriptions and planning dollars							1,500	1
Total backlog reforestation							20,700	

Impeded areas

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Brushing	20	20	20	20	20	1,155.00	23100	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	20	20	20	20	20	1,154.88	23,100	
Prescriptions and planning dollars							2,000	1
Total impeded areas							25,100	

Site Restoration

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	

Backlog Program Activities - Management Unit Total

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	226	176	126	126	126	32.97	7451	
Site preparation	0	0	0	0	0	0.00	0	
Planting	5	5	0	0	0	1,319.21	6600	
Brushing	46	25	51	20	20	1,149.95	52899	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	277	206	177	146	146	241.69	66950	
Seed purchase	6000	6000	0	0	0	1.00	6000	
Prescriptions and planning							3,500	
Recommended studies							0	
Total backlog program							76,450	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

TFL39 - Blocks 3&4 - Port McNeill District
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	13	0	0	0	0	96.92	1260	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	13	0	0	0	0	96.89	1,260	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							1,260	
Backlog Reforestation								
Surveys	1500	500	100	100	100	40.00	60000	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	5	5	0	0	0	1,320.00	6600	1
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	1505	505	100	100	100	44.25	66,600	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							3,000	1
Total backlog reforestation							69,600	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	10	10	10	10	10	1,155.00	11550	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	10	10	10	10	10	1,154.77	11,550	
Prescriptions and planning dollars							1,500	1
Total impeded areas							13,050	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	1513	500	100	100	100	40.49	61260	
Site preparation	0	0	0	0	0	0.00	0	
Planting	5	5	0	0	0	1,319.21	6600	
Brushing	10	10	10	10	10	1,154.77	11550	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1528	515	110	110	110	51.97	79410	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							4,500	
Recommended studies							0	
Total backlog program							83,910	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

TFL39 - Block 7 - Mid Coast District
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							0	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

TFL39 - Block 6 - Queen Charlottes District
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	100	100	50	50	50	33.00	3300	1
Site preparation	5	5	5	5	5	1,650.00	8250	1
Planting	20	20	0	0	0	2,000.00	40000	1
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	125	125	55	55	55	412.39	51,550	
Seed purchase	12000	12000	0	0	0	0.50	6000	1
Total legal obligations							57,550	
Backlog Reforestation								
Surveys	2300	1000	1000	1000	1000	33.00	75900	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	50	50	50	50	50	2,000.00	100000	1
Brushing	500	500	150	150	150	1,200.00	600000	1
Totals hectares	2850	1550	1200	1200	1200	272.25	775,900	
Seed purchase	30000	30000	30000	30000	30000	0.50	15,000	1
Prescriptions and planning dollars							20,000	1
Total backlog reforestation							810,900	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	20	20	20	20	20	1,320.00	26400	2
Totals hectares	20	20	20	20	20	1,319.87	26,400	
Seed purchase	12,000	12,000	12,000	12,000	12,000	0.50	6,000	2
Prescriptions and planning dollars								
Total site restoration							32,400	
Backlog Program Activities - Management Unit Total								
Surveys	2400	1100	1050	1050	1050	33.00	79200	
Site preparation	5	5	5	5	5	1,649.34	8250	
Planting	90	90	70	70	70	1,848.87	166400	
Brushing	500	500	150	150	150	1,200.00	600000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	2995	1695	1275	1275	1275	285.09	853850	
Seed purchase	54000	54000	42000	42000	42000	0.50	27000	
Prescriptions and planning							20,000	
Recommended studies	Retubing Study						20,000	2
Total backlog program							920,850	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

TFL 39 - Weyerhaeuser Company Ltd.
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on Type 1, Type 2 silviculture strategy & Provincial Default Values

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.
Potential volume/ha gain (m3/ha/yr) provincial factors:

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
0.71	0	0	0	2.9	0.63	0	0	0.42	

Years the factor will affect:

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
0	65	65	65	65	65	65	65	65	

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.
Provincial factors for estimated value gain at harvest

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
						5-15%	15%	5%	

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.
Est. short term employment rate (person days/ha) provincial factors:

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
0.1	0.34	0.1	1.5	2	2.43	4.14	5.5	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	Nursery Seedling Production	Silviculture Surveys
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	113		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	113		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			5,530
Total backlog surveys from the backlog table.			4,639
33% of all silviculture surveys			3,356
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply		(A)	0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			3,747
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			50
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			410

Habitat Supply
MELP staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity. 280

TFL 39 - Weyerhaeuser Company Ltd.
Performance Measures Based on Activities Planned for 2002/2003
Based on Type 1, Type 2 silviculture strategy & Provincial Default Values

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	113	0	3,747	25	113	626	465	110	2,250	8,244	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.42		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	21,597	16,683	7,556	0	61,425		107,261
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			50								50
1.5	Est. area that will be declared as free growing (ha)			410								410
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15%	5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	1.5	2	2.43	4.14	5.5	0.18	0.1	
3.2	Estimated total employment (person days/year)	11	0	375	38	226	1,521	1,925	605	405	824	
3.3	Estimated total full time equivalent positions (FTE)	0	0	2	0	1	8	11	3	2	5	33
4.1	**Forest Health Enhancement (ha)**											600
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											280
5.3	Est. area with secondary value provided to biodiversity (ha)											280

TFL 39 - Weyerhaeuser Company Ltd.
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	9,150	8,355	8,355	8,355	8,355	343	3,142,925
Planning, prescriptions and seedlings							179,500
Backlog Program Field Activities	5,403	2,756	1,612	1,571	1,541	215	1,163,970
Planning, prescriptions and seedlings							102,800
Totals	14,553	11,111	9,967	9,926	9,896		4,589,195

Performance Measures

Potential total merchentable volume increment in 65 years	107,261 m^3
Estimated ha that will be reclassified as stocked	50 ha
Estimated ha that will be declared as free growing	410 ha
Estimated total full time equivalent positions generated	33 FTEs
Forest health enhancement area	600 ha
Planned area for specific wildlife forage or habitat maintenance	280 ha
Estimated area with secondary value provided to biodiversity	280 ha

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL 39 Block 2 and 5

Legal Obli	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	0	26	#DIV/0!	0	0	33	33	0.0	Error last year. SMPs 01 and 02 were reported under B/L Reforestation.
Site prepa	0	0	#DIV/0!	0	0	1650	0	-100.0	
Planting	0	0	#DIV/0!	0	0	1320	0	-100.0	
Brushing	0	26	#DIV/0!	0	0	1155	1155	0.0	Error last year. SMPs 01 and 02 were reported under B/L Reforestation.
B/L Reforestation									
Surveys	1175	200	-82.978723	1	0	33	33	0.0	Backlog Free growing surveys will mostly be completed in 2001/02
Site Prep	0	0	#DIV/0!	0	0	1650	0	-100.0	
Planting	20	5	-75	2	0	1320	1320	0.0	None found in field
Brushing	80	0	-100	1	0	1155	0	-100.0	Error last year. This year doesn't include legal obligations and Impeded areas. Also, can't find suitable areas.

Impeded	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	0	0	#DIV/0!	0	0	33	0	-100.0	
brushing	0	20	#DIV/0!	0	0	1155	1155	0.0	Error last year. These goals were reported under B/L Reforestation.
Site Resoration									
Fill planting	[redacted]	0	#DIV/0!	0	0	1320	0	-100.0	Reported under enhanced this year. Goals increased to 120 ha based on Type 2 analysis
Rehab	0	0	#DIV/0!	0	0	2200	0	-100.0	
Reforestati	0	0	#DIV/0!	0	0	1320	0	-100.0	

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): TFL 39 blocks 2 and 5 within Campbell River Forest District

Stand Tending	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	3200	3200	0.0	1	1	33	33	0.0	
Spacing	185	185	0.0	1	2	1980	1980	0.0	Depending on the spacing regime ranking is 1 to 3
Pruning	50	20	-60.0	2	3	2420	2420	0.0	Pruning was ranked as a low priority by the Type 2 Analysis
Fertilizing	2500	1300	-48.0	1	1	330	330	0.0	Goals set to match histric levels and to meet recommended Silv program in Type 2 Analysis
Forest Health	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)
Spacing	0	0	#DIV/0!	0	0	1980	n/a	#VALUE!	
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Habitat Supply/ Biodiversity									
Riparian	[redacted]	120	71.4	1	1	3000	3000	0.0	Goals reported in backlog program last year, as site restoration
Non-Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL 39 Block 2 and 5

Legal Obli	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	0	26	#DIV/0!	0	0	33	33	0.0	Error last year SMPs 01 and 02 were reported under B/L Reforestation
Site prepar	0	0	#DIV/0!	0	0	1650	0	-100.0	
Planting	0	0	#DIV/0!	0	0	1320	0	-100.0	
Brushing	0	26	#DIV/0!	0	0	1155	1155	0.0	Error last year SMPs 01 and 02 were reported under B/L Reforestation
B/L Reforestation									
Surveys	1175	200	-82.978723	1	0	33	33	0.0	Backlog Free growing surveys will mostly be completed in 2001/02
Site Prep	0	0	#DIV/0!	0	0	1650	0	-100.0	
Planting	20	5	-75	2	0	1320	1320	0.0	None found in field
Brushing	80	0	-100	1	0	1155	0	-100.0	Error last year This year doesn't include legal obligations and impeded areas. Also, can't find suitable areas.

Impeded	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	0	0	#DIV/0!	0	0	33	0	-100.0	
brushing	0	20	#DIV/0!	0	0	1155	1155	0.0	Error last year These goals were reported under B/L Reforestation
Site Resoration									
Fill plantinc	0	0	#DIV/0!	0	0	1320	0	-100.0	Reported under enhanced this year. Goals increased to 120 ha based on Type 2 analysis
Rehab	0	0	#DIV/0!	0	0	2200	0	-100.0	
Reforestat	0	0	#DIV/0!	0	0	1320	0	-100.0	

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL) TFL 39 blocks 2 and 5 within Campbell River Forest District

Stand Tending	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)**
Surveys	3200	3200	0.0	1	1	33	33	0.0	
Spacing	185	185	0.0	1	2	1980	1980	0.0	Depending on the spacing regime ranking is 1 to 3
Pruning	50	20	-60.0	2	3	2420	2420	0.0	Pruning was ranked as a low priority by the Type 2 Analysis
Fertilizing	2500	1300	-48.0	1	1	330	330	0.0	Goals set to match histric levels and to meet recommended Silv program in Type 2 Analysis
Forest Health	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)**
Spacing	0	0	#DIV/0!	0	0	1980	n/a	#VALUE!	
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Habitat Supply/ Biodiversity									
Riparian	**70**	120	71.4	1	1	3000	3000	0.0	Goals reported in backlog program last year, as site restoration
Non-Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	

TFL 45 2001 – 2002

Resource Management Plan

June 20, 2001

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1. Incremental Silviculture Strategy Summary

The Incremental Silviculture Strategy Summary is part of the TFL 45 Type I Analysis done by Timberline Forest Consultants in August 2000.

General Strategy

As stated earlier, short and medium term timber flow on TFL 45 is constrained by timber availability at decade 12. Because of the timing of this constraint, considerable opportunity exists to enhance timber supply prior to this point. Generally, any strategy, which increases timber availability prior to decade 12, will have a positive impact on short and medium term timber flow. Tactics, which accelerate the development of managed stands, are particularly important in this regard. These tactics impact on timber availability in three positive fashions:

- Reduced time to greenup;
- Reduced minimum harvest ages; and
- Increased yields at rotation.

Quality targets have not been explicitly established for TFL 45. Several of the silviculture tactics identified for improvement of quantity are also expected to have a positive impact on quality. In addition, pruning could be implemented specifically to improve the supply of premium log grades. However, the cost of such a program is substantial, and more explicit definition of quality objectives should be completed prior to undertaking a pruning program.

Working Targets

The preceding analysis indicates the following working target is attainable:

- Maintain the existing AAC (220,000 m^3) for a period of 40 years;
- Maintain a mid-term level of at least 179,000 m^3; and
- Achieve a long-term level of 212,000 m^3.

Log Product Objectives

As stated, log product quality objectives have not been explicitly developed for TFL 45, nor was it possible to develop focus on this issue during the workshop. The following are product objectives at the log level, which have been developed for another TSA on the coast (Strathcona). These should be used as a starting point for further discussions on this issue.

Quality Class	**Species**	**Characteristics**
Premium Log:	Douglas-fir, clear, pruned	45 + cm min DBH, pruned, min 5 m log.
	Douglas-fir, large timber	55 + cm min DBH, unpruned.
	Douglas-fir, clear, unpruned	long rotation
	Hemlock, large timber	55 + cm min DBH, unpruned.
	Hemlock, clear, unpruned	long rotation.
	Cedar, large timber	55 + cm min DBH, unpruned.
	Cedar, clear, unpruned	2 rotations in stand.
Sawlog:	Minimum average stand DBH of 45 cm and min. stand vol. of 350 m³/ha.	

Silviculture Strategies

Strategies to Maintain Existing Timber Supply Target

Strategies to Increase the *Quantity* of Future Timber Supply

IM 1, IM 2, ST 1 Achieve earlier greenup through:

a) conifer release (50 ha/year) in North;

b) pre-commercially thin (50 ha/year), primarily in south; and

c) fertilize 17 ha/year @ planting.

ST 2 Achieve higher volumes in existing stands through fertilizing 200 ha/year late in rotation.

ST 3 Increase access to timber in VQOs by harvesting 60 ha/year using variable retention.

ST 4 Increase area of THLB through alder conversion on approximately 20 ha/year.

MT 1 Achieve small increase in medium term supply through commercially thinning 15 ha/year.

LT 1 Increase volumes in managed stands by planting genetically improved stock.

Strategies to Increase the *Quality* of Future Timber Supply

Q 1 Increase premium log content of future stands through pruning 30 ha/year, mainly in South.

Strategies to Increase the *Quantity* or *Quality* of Future Habitat Supply

H 1 Accelerate development of old-growth characteristics through by spacing 10 ha/year.

Summary of Information and Research Needs

No specific information/research needs were identified during the course of the workshop. However, in general, the following uncertainties are recognized:

1. Genetic gain expectations for current and future genetically improved stock;
2. Expected response to early and late fertilization regimes;
3. Yield and stand structural responses to variable retention harvesting systems; and
4. Yield and stand structural responses to commercial thinning.

2. TFL Enhanced and Backlog Program Issues

TFL North (Port McNeill District)

This portion of the TFL has more opportunities for backlog silvicultural projects than the south but is also more logistically difficult. There are a number of drainages that empty right into Knight Inlet and have poor or non existent road access. There are four main issues that exist in the northern TFL.

1 Alder brushing – there is the opportunity to conduct alder girdling projects for the next two to three years at Sallie Creek and also at the Head of Knights. These project will involve some helicopter access blocks. There is a significant amount of alder in Sims Creek which has not been field checked yet. There is a high probability that much of this area is not treatable due to it being too old, poor conifer understory (possible a spruce understory – high weevil hazard area) and high likelihood of abundant fish creeks throughout the aldered areas. To further complicate matters the only access into the valley is by helicopter.

2 Aerial fertilization – this area has been heavily planted to Douglas-fir in the past and a lot of density control has occurred. There are a lot of fir leading stands that would be good candidates for fertilization.

3 Site Restoration – there are a number of areas that were planted to sitka spruce and have experienced heavy P. strobi damage. It is expected that some of these stands may not have sufficient levels of other conifer species in order to bring stocking up to satisfactory levels. Most of these sites will be helicopter surveyed this fiscal year. These sites can be very productive but could be very expensive to treat.

TFL South (Campbell River District)

The southern portion of the TFL has traditionally been much easier to manage. This is reflected in that there is very little alder impeded areas to treat. It is estimated that there is approximately 50 Ha of lower priority alder to treat. The biggest difference with the south TFL is the milder climate and sites that have high levels of natural fill in. For this reason the bulk of the TFL spacing will occur in the south. There are many sites planted to Fd/Cw but receive very high levels of Hw fill in. At FTG these stands will have a Hw component of 75 % plus. Spacing of these stands is done for a number of reasons. In order to increase the Fd/Cw component in these heavy Hw ingress areas spacing is required. In addition to the species conversion factor the AAC Base Case assumes that stands will be ready for harvest 10 years less than mai culmination. It is thought for the stands that have greater than 5,000 stems per hectare that density control will have to occur in order for these stands to be a merchantable harvest size prior to mai culmination.

There are a lot of opportunities for doing enhanced silviculture on the southern TFL. There are significant areas planted to Fd and have had density control. Large fertilization projects could occur. Most of the pre 1987 stands have been spaced and post FTG appraisal stands are now being looked at.

3. *Silviculture Regimes and Investment Priorities*

The following table indicates incremental silviculture regimes which are suitable for attaining the above working targets and strategies.

Regime Table: TFL 45

Treatment		Location	Ha/yr	Timber Supply			Qua lity	Habitat			Direct Jobs	Direct Cost	Priority
				Sh	Me	Lo		OG	RI	W	Days/ha	$/ha	
	Surveys	North and South	400								0.1	75	1
IM 1	Conifer Release	North	50	0	0	0	0	0	+	+	2.0	1,500	1
IM 2	PCT-fibre	Mainly South	50	0	0	0	+	+	+	+	4.5	1,800	1
ST 1	Fertilization @ planting	South and North	200	+	+	+	0	0	0	0	0.5	130	3
ST 2	Fertilization-late rotation	South and North	200	+	+	+	+	0	0	0	0.1	320	2
ST 3	Alternative silviculture in VQOs	4 0 % North 60 % South	60	+	+	+	0	+	+	+	1.0	3,000	2
ST 4	Alder Conversion	South and North	20	+	+	+	0	0	+	+	1.0	25,000	4
MT 1	Commercial Thinning	North and South	15	0	0	0	+	0	+	+	0.5	4,000	4
LT 1	Genetic Improvement	South and North	200	0	0	+	+	0	0	0	0.0	0.0	4
Q 1	Pruning	Primarily South	30	0	0	0	+	0	0	+	10.0	2,500	4
H 1	PCT-habitat	North and South	10	0	0	0	-	0	+	+	4.5	1,800	4

4. *SH Data Template*

See attached Excel files.
The SH Data Tables were done for the North and South portions of the TFL as well as a summary table for both regions.

5. Communication Log

Agency:
TFL: TFL 45
TSA:

Communication Log for the Sustainable Harvest Objective
2002-2003
(also include community/stakeholder meetings to review silviculture strategies and SH plans)

Date	*Name (person contacted)*	*Representing*	*Communication Method*	*Comments/Issues*

5. TFL Plan Comparison

The TFL Plan Comparison can be found on the attached Excel files.
TFL Plan Comparison Tables have been separately for the South and North regions of the TFL.

7. *Proposed TFL Studies Form*

STUDY Outline

Short Description of Study	Previous licensee spaced stands to a low density (400 – 600 SPH) and many of these stands are now in 35 to 45 years old. These stands would be assessed for the type of habitat they have developed into.
Background / Justification	MoELP wants licensees to do wildlife habitat enhancement projects. IFP wants to assess and map the l that has been produced from past SH activities before additional projects are started. This study will he creating a habitat needs determination for the TFL.
Methods & Procedures	Past SH activities would be mapped and stands would be broken up into stratums. Field assessments w occur and habitant types would be quantified.
Lead Contact for Study	Interfor, Nigel Ross
Key partners affected by this issue	MoELP
Temporal Scale of importance (how urgent is this?)	This project is of medium urgency.
Spatial Scale (small vs wide reaching impacts)	Medium based spatial scale. Previous licensee (BCFP) was a major player in the forest indus results from this assessment could be utilized in many other locations.
Link to Resource Management Plans, Timber Supply Review, higher level plans	This assessment will provide a guide to further habitat enhancement work within TFL 45. Wi guidance in the RMP process, Management and Working Plans and Forest Development Plan selection of Old Growth Management Areas.

Strategic Objectives: (tick all that apply)	**SH**[1]	**EEV**	**SSFM**	**C&I**	**VA**[2]	**WF**
	X		X			

Region: Vancouver **Study (Y/N): Y**

New Project for 2002/03 (Y/N): Y

Proponent: Interfor

Number of years to complete: 1

Mgmt. Unit: TFL 45 (north and south)

$ to Complete $15,000

Workplan #: PAM02508/02608

Activity Location #:Knight Inlet/ Fanny Bay/ West Thurlow

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[1] SH = Sustainable Harvest EEV = Enhance Environmental Values SSFM = Strengthen Sustainable Forest Management C&I = Criteria and Indicators of Sustainability VA = Value Added CO = Communities WF = Workforce

[2] We will include needs for these strategic objectives if identified but will not ask specifically for these needs.

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement. The template design allows completion in a consistent format for all management units across the province. Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** TFL 45 Campbell River

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

TFL 45 Campbell River
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	700	75	700	75	700	21.43	15000	1
Spacing	50	0	100	0	0	2500.00	125000	1
Pruning	50	50	50	50	50	2500.00	125000	3
Fertilizing	500	0	500	0	500	300.00	150000	2
Other	0	0	0	0	0	0.00	0	
Totals hectares	1300	125	1350	125	1250	319.23	415,000	
Planning and prescriptions							10,000	1
Total dollars							425,000	
Forest Health Enhancement								
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	2	0	2	0	0	2,500.00	5000	1
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	2	0	2	0	0	2,498.75	5,000	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	700	75	700	75	700	21.43	15,000	
Spacing	50	0	100	0	0	2,499.95	125,000	
Pruning	50	50	50	50	50	2,499.95	125,000	
Fertilizing	500	0	500	0	500	300.00	150,000	
Other stand tending activities	2	0	2	0	0	2,495.01	5000	
Totals hectares	1302	125	1350	125	1250	322.58	420,000	
Planning and prescriptions							10,000	
Studies funding							5000	1
Total dollars							435,000	

TFL 45 Campbell River
Backlog Program Table
For the 2002/03 Fiscal Year

Activities

Legal Obligations

	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	

Backlog Reforestation

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	

Impeded areas

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Brushing	50	0	0	0	0	1,300.00	65000	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	50	0	0	0	0	1,299.95	65,000	
Prescriptions and planning dollars							2,000	
Total impeded areas							67,000	

Site Restoration

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	

Backlog Program Activities - Management Unit Total

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	50	0	0	0	0	1,299.95	65000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	50	0	0	0	0	1,299.64	65000	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							2,000	
Recommended studies							0	
Total backlog program							67,000	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

1/4/2006

TFL 45 Campbell River
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.

The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.77	0	0	0	2.9	0.41	0.25	0	0.46	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	
Provincial factors for estimated value gain at harvest							5-15%	15-30%	1-5%	
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys

Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys.

	Area		
	Tree Improvement	Nursery Seedling Production	Silviculture Surveys
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	0		
Enter area of all other sites planted with improved trees	0		
Total area affected by tree improvement	0		
B Nursery production of seedlings			
Enter sowing requests from SPAR		0	
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			700
Total EFP surveys from the EFP table			0
Total backlog surveys from the backlog table.			231
33% of all silviculture surveys			
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			0
Estimate area of free growing surveys			0
Estimate area of pre-stand tending surveys			700
Estimate of total surveys that will affect timber supply			(A) 700
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			700
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			0
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			0

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity.

TFL 45 Campbell River
Performance Measures Based on Activities Planned for 2002/2003
Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	0	0	700	0	0	50	50	50	500	1,352	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	1	1,333	813	0	15,000		17,148
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	0	0	70	0	0	131	198	227	90	135	
3.3	Estimated total full time equivalent positions (FTE)	0	0	0	0	0	1	1	1	1	1	5
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											2
5.3	Est. area with secondary value provided to biodiversity (ha)											0

TFL 45 Campbell River
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	1,302	125	1,350	125	1,250	323	420,000
Planning, prescriptions and seedlings							15,000
Backlog Program Field Activities	50	0	0	0	0	1,300	65,000
Planning, prescriptions and seedlings							2,000
Totals	1,352	125	1,350	125	1,250		502,000

Performance Measures

Potential total merchentable volume increment in 65 years	17,146 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	5 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	2 ha
Estimated area with secondary value provided to biodiversity	0 ha

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): TFL 45 Campbell River

Stand Tending	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (include separate attachment if more space necessary with reference #)
Surveys	75	700	833.3	1	1	33	21.43	-35.1	Fertilization surveys bring average cost down
Spacing	50	50	0.0	1	1	1980	2500	26.3	IFP feels that red circled crew can not space for $1980 per ha in remote location
Pruning	50	50	0.0	3	3	2420	2500	3.3	
Fertilizing	500	500	0.0	2	2	330	300	-9.1	IFP feels that it can fertilize for $300 per ha

Forest Health	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (include separate attachment if more space necessary with reference.#)
Spacing	0	0	#DIV/0!	0	0	1980	0	-100.0	
Pruning	0	0	#DIV/0!	0	0	2420	0	-100.0	
Habitat Supply/ Biodiversity									
Riparian	0	2	#DIV/0!	0	1	3000	2500	-16.7	IFP feels that it has some opportunities for riparian treatments and thinks it can do it for $2500/Ha
Non-Riparian	0	0	#DIV/0!	0	0	3000	0	-100.0	

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): **TFL 45 Campbell River**

	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Legal Obligation									
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site preparation	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
B/L Reforestation									
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site Prep	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	

	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Impeded									
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
brushing	0	50	#DIV/0!	0	1	1155	1300	12.6	IFP may have identified some lower priority alder girdling. Remote location so cost per ha is higher.
Site Resoration									
Fill planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Rehab	0	0	#DIV/0!	0	0	2200	n/a	#VALUE!	
Reforestation	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	

TFL Forest Ltd. - FRBC MYA CON 0001069 PAM 02505

RESOURCE MANAGEMENT PLAN

SUSTAINABLE HARVEST STRATEGIC OBJECTIVE

TREE FARM LICENCE NO. 47

(Johnstone Strait Management Unit portion within the Campbell River Forest District)

2002/2003 to 2006/2007

This document and the attached tables recommend sustainable harvest activities in the portion of Tree Farm Licence No. 47 (TFL 47) located within the Ministry of Forests Campbell River Forest District to support the Forest Renewal BC (FRBC) Sustainable Harvest Strategic Objective.

TFL 47 is held by TFL Forest Ltd (TimberWest).

Areas within the Strathcona Timber Supply Area, within or adjacent to areas where TimberWest operates, are not included in this plan.

The 2001/2002 Resource Management Plan (RMP) for TFL 47 was revised by TimberWest's foresters to produce this plan.

It is expected that strategic planning and field surveys being done in 2001/2002 will identify most treatment areas for 2002/2003 and a majority of the areas to be treated in subsequent years. This expectation meets the 2001/2002 FRBC Business Rule for the Sustainable Harvest program to prepare prescriptions for work in the current and following year.

General biodiversity/habitat supply plans and plans for rare, endangered or regionally significant species are not expected to be completed in 2001 however this initiative remains a priority. Planning for treatments will be initiated when the Interim Habitat Silviculture Strategy, Pacific Region RMP 2002/03 has been finalized.

REFERENCES AND ANALYSES

This plan is based on TimberWest's Tree Farm Licence No . 47, Type 1 Silviculture Strategy, March 28, 2001. Supporting data, discussions on constraints to timber supply, investment rationale and references are contained within this Silviculture Strategy. An executive summary of the Strategy is attached and forms an integral part of this RMP submission.

Please note that a portion of TFL 47's Johnstone Strait Management Unit (Blocks 1-3: Hanson Island, West Cracroft Island and East Cracroft Island) is included in the area administered by the Port McNeill Forest District and managed by the Beaver Cove Operation. A timber supply analysis was not redone to conform to Forest District boundaries for this RMP. Proposed activities on these islands are included in the Beaver Cove Operation (Block 1, 2, 3 and 17) RMP submitted to the Port McNeill Forest District.

Version 3.0 Interim Habitat Silviculture Strategy – June 8, 2001, Pacific Region RMP 2002/03 was used as a guide in planning habitat related Sustainable Harvest activities within TFL 47.

DESCRIPTION OF THE JOHNSTONE STRAITS MANAGEMENT UNIT

Management Unit Description and Basic Data

Please refer to the TFL Type 1 Silviculture Strategy for a detailed description of the Johnstone Strait Management Unit including species composition, site class and age class distributions.

Silviculture History

Refer to Appendix I of the TFL 47 Type 1 Silviculture Strategy.

Harvest Forecast (entire Johnstone Straits Management Unit)

The 2000 harvest forecast projects a long-term harvest rate of about 525,000 cubic meters. Most of this harvest will be from second growth stands. Refer to the TFL 47 Type 1 Silviculture Strategy for details of proposed AAC and timber supply analysis discussions.

Current NSR Status

There is a minimal amount of pre-1987 backlog non-sufficiently restocked (NSR) area within the Johnstone Strait Management Unit. Most of these areas are considered to be of poor site quality (rocky/salal). Existing sites are not deemed worthy of treatment due to the large amount of investment required to reach sufficiently re-stocked (SR) status (i.e. high access costs) and low expected growth rates.

RECOMMENDED PROGRAM

Objective: Return on investment

Highest priority is given to silvicultural investments that generate a positive financial return.

Planned activities:

1. Fertilization of Douglas-fir (Fd) at various stages of the harvest rotation. The annual program is anticipated to be approximately 600-700 hectares per year. There are potentially three applications:
   - aerial fertilization of Fd stands at any point in the rotation. This is a continuation of the current fertilizing program;
   - manual fertilization of late rotation Fd stands. This will include areas retained after commercial thinning and variable retention harvesting as well as some areas with no associated harvesting; and,
   - manual fertilization of mid rotation 30-40 years old Fd stands.

   Subsequent re-treatment of fertilized stands (multiple-stand entries) may follow on a 6-10 year cycle once new suitable candidate stands are no longer available.

2. Juvenile spacing, primarily to increase the Fd component of mixed fir and hemlock stands. A limited amount of suitable treatment area is available. This activity is to be re-evaluated annually as opportunities arise from free-growing stands becoming online.

3. Additional treatments with positive financial return will be incorporated into plan when (if) identified.

Objective: To control a provincially designated noxious plant species.

Planned activities:

4. Conduct an inventory and survey program of 'Scotch Broom' sites in late spring of 2002/2003. Once sites have been mapped, conduct an aggressive program of control/eradication of this species in TFL 47. This species should be controlled before its distribution and numbers are no longer manageable and productive ground is lost. This activity was not proposed in the TFL 47 Type 1 Silviculture Strategy.

Objective: **Forest Health Enhancement**

Planned activities:

5. Pruning for white pine blister rust

Objective: **Habitat Supply – various regimes**

Planned activities:

6. Stand management (spacing, fertilization and possibly pruning) to encourage development of desired habitat conditions. The objective is to ensure the availability of areas supplying desired forest characteristics while maximizing current and future harvest opportunities. Identification of candidate areas for treatment requires 'opportunity analyses' to be conducted. Opportunity analyses may take place in 2002/2003. Habitat types to be assessed include, but are not limited to grizzly bear forage and riparian stand conditions.

Studies

There are three studies proposed:

1. Conduct opportunity analyses in various harvested watersheds for the enhancement of grizzly bear forage maintenance. The final recommendations of the Interim Habitat Silviculture Strategy may guide selections of which drainages to be assessed in 2002/2003. Please refer to the attached Study Outline.

2. Conduct opportunity analyses (or Riparian Vegetation Assessment) in various harvested watersheds for the enhancement of riparian ecosystem values. The final recommendations of the Interim Habitat Silviculture Strategy may guide selections of which drainages to be assessed in 2002/2003. Please refer to the attached Study Outline.

3. To continue a study initiated by Many Vaartnou to replace exotic commercial grass and legume seed used in re-vegetation with native grass species. This is a continuation of a study initiated five years ago. Other licensees involved in the study include Weyco, WFP, Weldwood, INTERFOR and the MoF Small Business Program. TimberWest's portion of the funding requirements are estimated at $18,6000 per year for a total of five years. Year 2002/2003 will be the second year that the TimberWest's MYA has contributed to this study.

Working Targets

1. Increase yields in short, medium and long term for areas fertilized. All projects to yield a positive return on investment.

2. Increase proportion of dominant Fd in second growth stands.

3. Develop stand structures that allow greater harvest flexibility in the medium and long term to support landscape, biodiversity, recreation, and water quality objectives.

ADDITIONAL REQUIRED RMP TABLES

Please find attached the additional required information that forms part of this RMP submission:

- Silviculture Treatment Regime Summary Table (*Table 9* of the TFL 47, Silviculture Strategy).
- Program Tables;
- Performance Measure Tables;
- Management Unit Summary Table;
- Table A Program Comparison Tables; and,
- Communication Log

This RMP submission was prepared by David Elstone, RPF, of EBA Engineering Consultants Ltd. Should the reader have any questions about this RMP, please contact Mr. Elstone by phone at 604-740-8094 or by email at delstone@eba.ca.

Executive Summary

The objective of this Strategy is to identify, analyze, prioritize and schedule incremental silvicultural activities that will have a positive influence on the future quality and quantity of habitat and timber supply within Tree Farm Licence No. 47 (TFL 47). TFL 47 is under the management of TFL Forest Ltd. (TimberWest). David Elstone of EBA Engineering Consultants Ltd. (EBA), led a workshop session on October 27, 2000, to present and discuss various silviculture regimes and treatments with representatives from the Ministry of Forests (MoF), the Ministry of Environment, Lands and Parks (MELP) and TimberWest. Strategies were presented and discussed within the context of Tree Farm Licence No. 47, Draft Management Plan No. 3, for January 1, 2001 – December 31, 2005, and its associated Appendices and Information Reports.

The workshop session resulted in an understanding of which silviculture treatments TimberWest would likely pursue through Forest Renewal BC (FRBC) funding. Proposed silviculture treatments were ranked in order of interest by TimberWest. EBA incorporated the results of the workshop session into a draft document and added forecasts of future effects to harvest quality and quantity, funding requirements and employment yields.

Silvicultural activities discussed in the Strategy will only proceed with funding from FRBC or other similar programs.

TFL 47 consists of three management units (MU) on Vancouver Island, the mainland and the Queen Charlotte Islands: Johnstone Straits, Bonanza Lake and Moresby Island. The Type 1 Silviculture Strategy includes only the Johnstone Straits and Bonanza Lake management units. For the purpose of the Strategy, the Johnstone Straits and Bonanza Lake portions of TFL 47 will henceforth be collectively referred to as TFL 47.

TFL 47 is in two Ministry of Forests forest districts: Campbell River and Port McNeill.

Access to the forests of the Johnstone Strait MU is by air or water. The Bonanza Lake MU is easily accessible from Highway 19 from its western and northern boundaries.

The timber supply analysis for the Johnstone Strait MU shows the base case scenario equal to the long-term sustainable harvest. A 'fall down' is not expected for the Johnstone Strait MU due to a long history of timber harvesting which has resulted in the progressive re-distribution of stand age classes.

The Bonanza Lake MU has a forecasted timber supply 'fall-down'; however, it is expected that the fall-down will be not be significant due to a step down progression in harvest levels to the long term sustainable harvest level.

As discussed at the workshop session, the Johnstone Straits MU has no significant habitat supply issues to be addressed as there are no 'critical' wildlife species to be managed. There are no ungulate winter ranges within the Johnstone Strait MU. Reserves and buffers for streams and the ocean supply much of the important habitat for wildlife species within the Johnstone Strait area.

Habitat supply issues were discussed in limited scope at the workshop for the Bonanza Lake MU. Current efforts for habitat supply are deemed status quo for the short term.

Objectives of the Silviculture Program are paraphrased from TimberWest's Tree Farm Licence No. 47, Draft Management Plan No. 3. Management of timber supply and timber quality will be accomplished through the following objectives:

- To promote forest growth by practicing high quality basic silviculture and by implementing an incremental silviculture program (where funded by external sources).

- To manage age class imbalances by harvesting some second growth stands before they reach culmination of mean annual increment (MAI) provided that the stands are economically viable.

- To maximize the production of high quality sawlogs. TimberWest follows the concept that differentiating future products through strategic investment in conversion facilities is far more prudent than attempting to differentiate the forest resource today for unknown markets of the future. Efforts in stand management are to maximize volume growth to achieve stems 20 to 50 cm in diameter with straight boles, minimal taper and small branches.

- TimberWest has no explicit employment objectives within its Management Plan.

- TimberWest's financial objective is for incremental silviculture activities to provide a positive, acceptable return on investment.

TimberWest's FRBC Silviculture Program's Working Targets are:

- Working Target 1 (Overall) - Most projects to yield a positive return on investment.

- Working Target 2 (Quantity) - Increase yields in the short, medium and long term in direct proportion to area fertilized.

- Working Target 3 (Quantity) - Develop stand structure that allows greater harvest flexibility in the medium and long term.

- Working Target 4 (Quantity) - Increase timber supply by widening the forest product market profile through management of crop species with no previous stand management.

- Working Target 5 (Quality) - Increase proportion of dominant Fd, Cw and Yc in merchantable second growth stands to 10% of volume in medium and long term.

- Working Target 6 (Quality) - Manage for wood quality attributes including small knot sizes and low bole taper.

- Working Target 7 (Habitat) - Promote the survival of white pine in reforested stands of the Johnstone Strait MU by preventing the spread of white pine blister rust, through pruning of lower branches.

- Working Target 8 (Habitat) - Assess pre-1994 logged riparian areas in terms of damaged riparian function and what role silviculture can play in the recovery of the riparian forest ecosystem.

TimberWest ranks late rotation fertilization as its highest priority for FRBC investment. All other FRBC eligible incremental silviculture activities have a medium to low priority.

Hectares (ha) Treated By Activity and Year for Tree Farm Licence No. 47.

Program	*Management Unit*	*Year*	*Aerial Fertilization**	*Manual Fertilization**	*Spacing*	*Pruning*	*Total*
Incremental	Johnstone Strait	Subtotal 1-10	6,000	500	400	150	7,050
Incremental	Bonanza Lake	Subtotal 1-10	0	750	500	0	1,250
Incremental	Johnstone Strait + Bonanza Lake	Total 1-10	6,000	1,250	900	150	8,300
Habitat Supply	Johnstone Strait	Subtotal 1-10	-	65	65	3.5	133.5
Habitat Supply	Bonanza Lake	Subtotal 1-10	-	65	65	-	130
Habitat Supply	Johnstone Strait + Bonanza Lake	Total 1-10	-	130	130	3.5	263.5
Incremental + Habitat Supply	Johnstone Strait + Bonanza Lake	Total 1-10	6,000	1,380	1,030	153.5	8,563.5

*Both aerial and manual fertilization treatments include a combination of early and late rotation stands.

Expenditure ($) By Activity and Year for Tree Farm Licence No. 47.

Program	*Management Unit*	*Year*	*Aerial Fertilization**	*Manual Fertilization**	*Spacing*	*Pruning*	*Total*
Incremental	Johnstone Strait	Subtotal 1-10	2,100,000	262,500	560,000	210,000	3,132,500
Incremental	Bonanza Lake	Subtotal 1-10	0	375,000	700,000	0	1,075,000
Incremental	Johnstone Strait + Bonanza Lake	Total 1-10	2,100,000	637,500	1,260,000	210,000	4,207,500
Habitat Supply	Johnstone Strait	Subtotal 1-10	-	34,125	117,000	4,900	156,025
Habitat Supply	Bonanza Lake	Subtotal 1-10	-	34,125	117,000	-	151,125
Habitat Supply	Johnstone Strait + Bonanza Lake	Total 1-10	-	68,250	234,000	4,900	307,150
Incremental + Habitat Supply	Johnstone Strait + Bonanza Lake	Total 1-10	2,100,000	705,750	1,494,000	214,900	4,514,650

*Both aerial and manual fertilization treatments include a combination of early and late rotation stands.

Employment (Person Years[1]) By Activity and Year for Tree Farm Licence No. 47.

Program	*Management Unit*	*Year*	*Aerial Fertilization**	*Manual Fertilization**	*Spacing*	*Pruning*	*Total*
Incremental	Johnstone Strait	Subtotal 1-10	1.30	2.80	6.66	6.60	17.36
Incremental	Bonanza Lake	Subtotal 1-10	0.00	4.17	5.60	0.00	9.77
Incremental	Johnstone Strait + Bonanza Lake	Total 1-10	1.30	6.97	12.26	6.60	27.13
Habitat Supply	Johnstone Strait	Subtotal 1-10	-	0.53	1.43	0.07	2.03
Habitat Supply	Bonanza Lake	Subtotal 1-10	-	0.53	1.43	-	1.96
Habitat Supply	Johnstone Strait + Bonanza Lake	Total 1-10	-	1.06	2.86	0.07	3.99
Incremental + Habitat Supply	Johnstone Strait + Bonanza Lake	Total 1-10	1.30	8.03	15.12	6.67	31.12

*Both aerial and manual fertilization treatments include a combination of early and late rotation stands.

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[1] Note: Assumes 180 days of silviculture work = 1 job (Source: Strathcona TSA, Incremental Silviculture Strategy (Interim) using the Source: Jobs and Timber Accord)

TFL 47, Portion in the Campbell River Forest District, Sustainable Harvest RMP 2002/2003
Grizzly Bear Forage Habitat Overview Assessment Proposal

STUDY Outline

Short Description of Study	Overview assessments or 'opportunity analyses' of various watersheds within the Fulmore Landscape Unit to determine the condition of available grizzly bear forage habitat.
Background / Justification	The Interim Habitat Silvicture Strategy, June 8, 2001 identifies the Fulmore Landscape Unit as an area where enhanced silviculture activities may be used in the management of grizzly bear forage opportunities.
Methods & Procedures	A finalized Habitat Silviculture Strategy will include a landscape level analysis that should identify specific watersheds to assess. Overview/ reconnaissance type assessments would be done to determine forage production opportunities based on criteria that may include harvesting history, site series, age class distribution etc… Tools that may be used to assist in the assessments would be terrain ecosystem mapping, (TEM), aerial photography and helicopter overview flights.
Lead Contact for Study	TFL Forest Ltd., the agency that replaces the Ministry of Environment, Lands and Parks and the Ministry of Forests
Key partners affected by this issue	Mainland areas of the Vancouver Forest Region.
Temporal Scale of importance (how urgent is this?)	Short to Medium term effect
Spatial Scale (small vs wide reaching impacts)	Assessments to be conducted on a watershed basis.
Link to Resource Management Plans, Timber Supply Review, higher level plans	-TFL 47 (portion within the Campbell River Forest District) RMP 2002/2003. -Interim Habitat Silviculture Strategy, June 8, 2001. -Forest Practice Code – Establishment to Free Growing Guidelines. -Grizzly Bear Conservation Strategy

Strategic Objectives: (tick all that apply)	**SH[1]**	**EEV**	**SSFM**	**C&I**	**VA[2]**	**WF**
	X					

Region: Vancouver **Study (Y/N):** N	**Mgmt. Unit:** TFL 47, Johnstone Strait Management Unit
New Project for 2002/03 (Y/N): Y	**$ to Complete** $50,000 (est.)
Proponent: TFL Forest Ltd.	**Workplan #:** PAM 02505
Number of years to complete: 1 to 2	**Activity Location #:** N/A

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[1] SH = Sustainable Harvest EEV = Enhance Environmental Values SSFM = Strengthen Sustainable Forest Management C&I = Criteria and Indicators of Sustainability VA = Value Added CO = Communities WF = Workforce

[2] We will include needs for these strategic objectives if identified but will not ask specifically for these needs.

TFL 47, Portion in the Campbell River Forest District, Sustainable Harvest RMP 2002/2003
Completion of Development of a Native Grass Seed Industry for Vancouver Island Proposal

STUDY Outline

Short Description of Study	Development of a supply of native grass seed for use in forestry and other reclamation activities on Vancouver Island that will meet the following criteria: • Equivalent survival and development to introduced agronomic species • Sufficient supply to be a practical alternative for large-scale seed users • Equivalent cost to introduced agronomic grass seed. Please refer to the attached proposal.
Background / Justification	Section 15 of the Forest Road Regulation requires that exposed soil be revegetated within stated periods using approved methods. The Biodiversity Guidebook (Chapter 2C) encourages the use of native seed for revegetation. There is currently no native seed available for this purpose.
Methods & Procedures	Seed has been selected and is being grown at a nursery near Duncan. Test sites have being established and are being monitored at various locations.
Lead Contact for Study	Manivalde (Many) Vartnou, M.Vaartnou & Associates, 11520 Kestrel Drive, Richmond, B.C., V7E 4E2
Key partners affected by this issue	Forest Licensees, Ministry of Forests, Ministry of Environment
Temporal Scale of importance (how urgent is this?)	Urgent as initial selection and site trials are underway.
Spatial Scale (small vs wide reaching impacts)	Wide reaching importance.
Link to Resource Management Plans, Timber Supply Review, higher level plans	Linked to FPC guidebook requirements.

Strategic Objectives: (tick all that apply)	**SH**[1]	**EEV**	**SSFM**	**C&I**	**VA**[2]	**WF**
	X					

Region: Vancouver **Study (Y/N): Y**
New Project for 2002/03 (Y/N): N
Proponent: TFL Forest Ltd. and other licensees
Number of years to complete: Year 2 out of 5

Mgmt. Unit: TFL 47, Johnstone Strait Management Unit
$ to Complete $18,600 per year
Workplan #: PAM 02505
Activity Location #: 721337

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[1] SH = Sustainable Harvest EEV = Enhance Environmental Values SSFM = Strengthen Sustainable Forest Management C&I = Criteria and Indicators of Sustainability VA = Value Added CO = Communities WF = Workforce

[2] We will include needs for these strategic objectives if identified but will not ask specifically for these needs.

TFL 47, Portion in the Campbell River Forest District, Sustainable Harvest RMP 2002/2003 Riparian Habitat Overview Assessment Proposal

STUDY Outline

Short Description of Study	Overview assessments or 'opportunity analyses' of various watersheds within the Johnstone Strait Management Unit to determine what opportunities exist to enhance riparian biodiversity and habitat through enhanced silviculture activities.
Background / Justification	TimberWest wishes to explore areas within the Johnstone Straits where stand management may be done to enhance the development of old growth characteristics (such as large woody debris) in riparian zones.
Methods & Procedures	Overview/ reconnaissance type assessments would be done to determine riparian condition. Assessments may follow the procedures outlined in the Watershed Restoration Technical Circular No. 6, Riparian Assessment and Prescription Procedures (RAPP). Tools that may be used to assist in the assessments would be terrain ecosystem mapping, (TEM), aerial photography and helicopter overview flights. A finalized Habitat Silviculture Strategy for the Pacific Region may identify specific watersheds to explore.
Lead Contact for Study	TFL Forest Ltd., the agency that replaces the Ministry of Environment, Lands and Parks and the Ministry of Forests
Key partners affected by this issue	N/a
Temporal Scale of importance (how urgent is this?)	Medium to Long term effects
Spatial Scale (small vs wide reaching impacts)	Assessments to be conducted on a watershed basis.
Link to Resource Management Plans, Timber Supply Review, higher level plans	-TFL 47 (portion within the Campbell River Forest District) RMP 2002/2003. -Interim Habitat Silviculture Strategy, June 8, 2001. -TFL 47 Type 1 Silviculture Strategy, March 28, 2001.

Strategic Objectives: (tick all that apply)	**SH**[1]	**EEV**	**SSFM**	**C&I**	**VA**[2]	**WF**
	X					

Region: Vancouver **Study (Y/N): N**

New Project for 2002/03 (Y/N): Y

Proponent: TFL Forest Ltd.

Number of years to complete: 1 to 2

Mgmt. Unit: TFL 47, Johnstone Strait Management Unit

$ to Complete $30,000 (est.)

Workplan #: PAM 02505

Activity Location #: N/A

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[1] SH = Sustainable Harvest EEV = Enhance Environmental Values SSFM = Strengthen Sustainable Forest Management C&I = Criteria and Indicators of Sustainability VA = Value Added CO = Communities WF = Workforce

[2] We will include needs for these strategic objectives if identified but will not ask specifically for these needs.

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** Tree Farm Licence No. 47 - Portion in the Campbell River Forest

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

Tree Farm Licence No. 47 - Portion in the Campbell River Forest District
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	450	300	300	200	200	40.00	18000	1
Spacing	10	25	25	25	25	1800.00	18000	2
Pruning	0	0	0	0	0	0.00	0	
Fertilizing	650	650	650	650	650	350.00	227500	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	1110	975	975	875	875	237.39	263,500	
Planning and prescriptions							20,000	1
Total dollars							283,500	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	5	5	5	5	5	2,420.00	12100	2
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	5	5	5	5	5	2,419.03	12,100	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	10	10	10	10	10	3,000.00	30000	2
Non-riparian treatments	10	10	10	10	10	3,000.00	30000	2
Totals hectares	20	20	20	20	20	3,000.00	60,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	450	300	300	200	200	40.00	18,000	
Spacing	10	25	25	25	25	1,799.82	18,000	
Pruning	5	5	5	5	5	2,419.52	12,100	
Fertilizing	650	650	650	650	650	350.00	227,500	
Other stand tending activities	20	20	20	20	20	2,999.55	60000	
Totals hectares	1135	980	980	880	880	295.68	335,600	
Planning and prescriptions							20,000	
Studies funding							98600	1
Total dollars							454,200	

Tree Farm Licence No. 47 - Portion in the Campbell River Forest District
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	6	10	10	10	10	2,200.00	13200	2
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	6	10	10	10	10	2,199.27	13,200	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							13,200	
Backlog Program Activities - Management Unit Total								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	6	10	10	10	10	2,199.27	13200	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	6	10	10	10	10	2,194.88	13200	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							13,200	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Tree Farm Licence No. 47 - Portion in the Campbell River Forest District
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on Tree Farm Licence No. 47, Type Silviculture Strategy and Provincial Default Factors.

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.77	0	0	0	2.9	0.41	0.25	0	0.46	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	
Provincial factors for estimated value gain at harvest							5-15%	15-30%	1-5%	
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area: Tree Improvement	Area: Nursery Seedling Production	Area: Silviculture Surveys
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	0		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	0		
B Nursery production of seedlings			
Enter sowing requests from SPAR		0	
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			450
Total backlog surveys from the backlog table.			0
33% of all silviculture surveys			149
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply			(A) 0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			149
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			0
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			0

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity. 20

Tree Farm Licence No. 47 - Portion in the Campbell River Forest District
Performance Measures Based on Activities Planned for 2002/2003
Based on Tree Farm Licence No. 47, Type Silviculture Strategy and Provincial Default Factors.

	Performance Measure	Tree Improve-ment	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	0	0	149	6	0	0	10	5	650	840	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	1	0	163	0	19,500		19,663
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	0	0	15	6	0	0	40	23	117	84	
3.3	Estimated total full time equivalent positions (FTE)	0	0	0	0	0	0	0	0	1	0	2
4.1	**Forest Health Enhancement (ha)**											5
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											20
5.3	Est. area with secondary value provided to biodiversity (ha)											20

Tree Farm Licence No. 47 - Portion in the Campbell River Forest District
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	1,135	980	980	880	880	296	335,600
Planning, prescriptions and seedlings							118,600
Backlog Program Field Activities	6	10	10	10	10	2,195	13,200
Planning, prescriptions and seedlings							0
Totals	1,141	990	990	890	890		467,400

Performance Measures

Potential total merchantable volume increment in 65 years	19,663 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	2 FTEs
Forest health enhancement area	5 ha
Planned area for specific wildlife forage or habitat maintenance	20 ha
Estimated area with secondary value provided to biodiversity	20 ha

Table 9. Treatment Activity Priorities for Tree Farm Licence No. 47.

Regime	**Rank (#) Priority (L, M, H)**		**Strategy**	**Opportunity Area (ha/year)**	**Timber Supply Effects**			**Quality**	**Habitat[1]**			**Direct[2] Silvic. Jobs (Days/ha)**	**Direct[3] Cost ($/ha)**
	JS	*BL*			*Short*	*Medium*	*Long*		*OG*	*Riparian*	*Wildlife*		
1. High quality basic silviculture	1	1	MT1, QMT1	All harvested stands	0	+	+	+	+	+	+	N/a	N/a
Rapid and adequate reforestation	H	H		(Non-FRBC eligible)									
Vegetation management													
2 Tree Improvement	2 H	2 H	MT2,QMT2	All harvested stands (Non-FRBC eligible)	0	+	+	+	+	+	+	N/a	N/a
Fertilization													
3. Late rotation Fd stand fertilization	3	3											
Aerial fertilization – **JS**	H	H	ST2, QST1	100	+	+	+	+	+	0(+)[4]	+	0.04	350
Aerial fertilization – **BL**			ST2, QST1	0	+	+	+	+	+	0(+)[18]	+	0.04	300
Manual fertilization – **JS**			ST2, QST1	50	+	+	+	+	+	0(+)[18]	+	1.00	525
Manual fertilization – **BL**			ST2, QST1	0	+	+	+	+	+	0(+)[18]	+	1.00	500
4. Multiple-stand entry fertilization	4	4											
Aerial fertilization – **JS** (Fd, Cw, Yc)	M	M	MT3	500	0	+	+	0	+	0(+)[18]	+	0.04	350
Manual fertilization – **BL** (Cw, Yc)[5]			MT3	50	0	+	+	0	+	0(+)[18]	+	1.00	500
Stand tending													
5. Promotion of valuable crop species	5	5											
Spacing – **JS** (Fd)	L	L	QMT3	25	0	0	0	+	+	+	+	3.00	1400
Spacing – **BL** (Cw, Yc)			QMT3	50	0	0	0	+	+	+	+	2.00	1400
Manual fertilization – **JS** (Fd)			QMT3	0	0	0	0	+	+	+	+	0.00	0
Manual fertilization – **BL** (Cw, Yc)			QMT3	50	0	0	0	+	+	+	+	1.0	500
6. Stand density control of red alder	6	N/a											
Spacing – **JS** (Dr)	L		MT4, QMT5	0-5	0	+	+	+	0	0	0	3.00	1400
Pruning – **JS**			MT4, QMT5	0-5	0	+	+	+	0	0	0	8.00	1400

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[1] It is generally accepted that any treatment on the landscape that promotes diversity in landscape attributes will promote biodiversity.

[2] Estimates for productivity and costs for many of the treatments listed are based on limited or no previous experience within TFL 47. Future analyses will require this information which should be collected from operational trials.

[3] Costs for the same treatment within the same management unit may differ depending on if the activity is coupled with one or more other type of activities.

[4] It is expected that treatments will not take place within riparian reserve zones (unless intentionally prescribed for non-timber management objective), but may occur within the riparian management zones as defined by the Forest Practices Code.

[5] The first stand entry for manual fertilization in stands of **BL** may be done concurrently with a spacing treatment under an overall treatment regime for promoting valuable crop species.

Table 9. Continued.

Regime	Rank (#) Priority (L, M, H) JS	BL	Strategy	Opportunity Area (ha/year)	Timber Supply Effects Short	Medium	Long	Quality	Habitat[6] OG	Riparian	Wildlife	Direct[7] Silvic. Jobs (Days/ha)	Direct[2,8] Cost ($/ha)
7. White pine management	8	N/a											
Pruning – **JS**	L		HLT1	0.5	0	0	0	0	+	0	0	4.00	1400
8. Riparian stand tending	9	7											
Spacing – **JS**	L	L	HLT2	10	0	0	0	0	+	+	+	4.00	1800
Spacing - **BL**			HLT2	10	0	0	0	0	+	+	+	4.00	1800
Manual fertilization – **JS**			HLT2	10	0	0	0	0	+	+	+	1.50	525
Manual fertilization – **BL**			HLT2	10	0	0	0	0	+	+	+	1.50	525

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[6] It is generally accepted that any treatment on the landscape that promotes diversity in landscape attributes will promote biodiversity.

[7] Estimates for productivity and costs for many of the treatments listed are based on limited or no previous experience within TFL 47. Future analyses will require this information which should be collected from operational trials.

[8] Costs for the same treatment within the same management unit may differ depending on if the activity is coupled with one or more other type of activities.

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): 47 Johnstone Strait Management Unit - Campbell River Forest District

Stand Tending	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	500	450	-10.0	1	1	33	40	21.2	The Johnstone Strait Management Unit is only accessible by air or water which as a result creates high survey costs
Spacing	50	10	-80.0	2	2	1980	1800	-9.1	At the current time there are minimal opportunities known to be available for this activity
Pruning	0	0	#DIV/0!	0	0	2420	0	-100.0	
Fertilizing	600	650	8.3	1	1	330	350	6.1	
Forest Health	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)**
Spacing	0	0	#DIV/0!	0	0	1980	0	-100.0	
Pruning	0	5	#DIV/0!	0	2	2420	2420	0.0	White pine trees are reaching the height at which pruning may be an option in order to retain this species within the stand
Habitat Supply/ Biodiversity									
Riparian	0	10	#DIV/0!	0	2	3000	3000	0.0	TimberWest's interest in riparian stand management has increased over last year
Non-Riparian	0	10	#DIV/0!	0	2	3000	3000	0.0	TimberWest's interest in grizzly bear forage maintenance opportunities has increased over last year

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): 47 Johnstone Strait Management Unit - Campbell River Forest District

	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Legal Obligation									
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site preparation	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
B/L Reforestation									
Surveys	100	n/a	#VALUE!	0	0	33	n/a	#VALUE!	For Surveys, Planting and Site Preparation: The Johnstone Strait Management Unit has minor amounts of poor access backlog NSR sites that would require a high amount of investment for sites with low productivity. No future treatments anticipated
Site Prep	4	n/a	#VALUE!	0	0	1650	n/a	#VALUE!	
Planting	4	n/a	#VALUE!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
	Last Year's 2002/2003 ha	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)**
Impeded									
Surveys	800	n/a	#VALUE!	0	0	33	n/a	#VALUE!	For both Backlog Surveys and Backlog Brushing: The Johnstone Strait Management Unit has minor amounts of poor access backlog non-free growing sites that would require a high amount of investment. No future treatments anticipated.
brushing	20	n/a	#VALUE!	0	0	1155	n/a	#VALUE!	
Site Resoration									
Fill planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	TimberWest is interested in controlling the spread and reducing the impact that Scotch Broom has on the productive land base.
Rehab	6	6	0	0	2	2200	2200	0.0	
Reforestation	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	

Agency: **TFL Forest Ltd**
TFL: **47 Johnstone Strait Management Unit - Campbell River**
TSA:

Communication Log for the Sustainable Harvest Objective 2002-2003
(also include community/stakeholder meetings to review silviculture strategies and SH plans)

Date	*Name (person contacted)*	*Representing*	*Communication Method*	*Comments/Issues*
22-Jun-01	Rick Monchak	TFL 47 Johnstone Strait Operation	Phone Conversation	Revised 2001/02 RMP to the 2002/03 RMP.
	Colin Buss	TFL 47 Johnstone Strait Operation	(Conference)	
	David Elstone	EBA Planning and Implementation Contractor		
25-Jun-01	Frank Barber	Ministry of Forests	Phone Conversation	Performance Measure Calculator - various issues.
	David Elstone	EBA Planning and Implementation Contractor		
25-Jun-01	Colene Wood	Ministry of Environment, Lands and Parks	Email	Interim Habitat Silviculture Strategy - habitat condition planning.
	David Elstone	EBA Planning and Implementation Contractor		
26-Jun-01	Rick Monchak	TFL 47 Johnstone Strait Operation	Email	TimberWest Divisional approval of 2002/2003 RMP
	David Elstone	EBA Planning and Implementation Contractor		
26-Jun-01	Jack Turley	TimberWest FRBC Manager	Email	TimberWest approval of 2002/2003 RMP
	David Elstone	EBA Planning and Implementation Contractor		

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at
http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** Mid Coast District SUM TSA & TFLs

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

Mid Coast District SUM TSA & TFLs
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities

	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	780	80	80	80	80	70.51	55000	
Spacing	295	20	20	20	20	2338.98	690000	
Pruning	280	10	10	10	10	2060.71	577000	
Fertilizing	0	0	0	0	0	0.00	0	
Other	0	0	0	0	0	0.00	0	
Totals hectares	1355	110	110	110	110	975.64	1,322,000	
Planning and prescriptions							4,000	
Total dollars							1,326,000	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	50	0	0	0	0	75.00	3750	
Totals hectares	50	0	0	0	0	74.99	3,750	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	10	10	10	10	10	2,999.40	30000	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	10	10	10	10	10	2,998.50	30,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	780	80	80	80	80	70.51	55,000	
Spacing	295	20	20	20	20	2,338.95	690,000	
Pruning	280	10	10	10	10	2,060.68	577,000	
Fertilizing	0	0	0	0	0	0.00	0	
Other stand tending activities	60	10	10	10	10	562.40	33750	
Totals hectares	1415	110	110	110	110	958.11	1,355,750	
Planning and prescriptions							4,000	
Studies funding							0	
Total dollars							1,359,750	

1/4/2006

Mid Coast TSA
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	700	0	0	0	0	70.00	49000	1
Spacing	275	0	0	0	0	2327.27	640000	2
Pruning	270	0	0	0	0	2044.44	552000	3
Fertilizing	0	0	0	0	0	0.00	0	
Other	0	0	0	0	0	0.00	0	
Totals hectares	1245	0	0	0	0	996.79	1,241,000	
Planning and prescriptions							0	
Total dollars							1,241,000	

Forest Health Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	50	0	0	0	0	75.00	3750	1
Totals hectares	50	0	0	0	0	75.00	3,750	

Habitat Supply and Biodiversity Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Domestic Range

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	
Surveys	700	0	0	0	0	70.00	49,000	
Spacing	275	0	0	0	0	2,327.26	640,000	
Pruning	270	0	0	0	0	2,044.44	552,000	
Fertilizing	0	0	0	0	0	0.00	0	
Other stand tending activities	50	0	0	0	0	74.99	3750	
Totals hectares	1295	0	0	0	0	961.19	1,244,750	
Planning and prescriptions							0	
Studies funding							0	
Total dollars							1,244,750	

Naka Tree Farm Licence 25 Block 5 (Mid-coast)
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Fertilizing	0	0	0	0	0	0.00	0	
Other	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Planning and prescriptions							0	
Total dollars							0	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	0	0	0	0	0	0.00	0	
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Fertilizing	0	0	0	0	0	0.00	0	
Other stand tending activities	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Planning and prescriptions							0	
Studies funding							0	
Total dollars							0	

TFL39 - Mid Coast District Block 7
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	80	80	80	80	80	75.00	6000	2
Spacing	20	20	20	20	20	2500.00	50000	2
Pruning	10	10	10	10	10	2500.00	25000	3
Fertilizing	0	0	0	0	0	0.00	0	
Other	0	0	0	0	0	0.00	0	
Totals hectares	110	110	110	110	110	736.35	81,000	
Planning and prescriptions							4,000	2
Total dollars							85,000	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	10	10	10	10	10	3,000.00	30000	1
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	10	10	10	10	10	2,999.70	30,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	80	80	80	80	80	75.00	6,000	
Spacing	20	20	20	20	20	2,499.88	50,000	
Pruning	10	10	10	10	10	2,499.75	25,000	
Fertilizing	0	0	0	0	0	0.00	0	
Other stand tending activities	10	10	10	10	10	2,998.80	30000	
Totals hectares	120	110	110	110	110	924.95	111,000	
Planning and prescriptions							4,000	
Studies funding							0	
Total dollars							115,000	

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Mid Coast District SUM TSA & TFLs
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	10	0	0	0	0	991.80	9920	1
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	10	0	0	0	0	991.01	9,920	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							9,920	
Impeded areas								
Surveys	750	150	150	150	150	62.33	46750	1
Brushing	270	20	20	20	20	2,448.14	661000	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1020	170	170	170	170	693.87	707,750	
Prescriptions and planning dollars							4,725	1
Total impeded areas							712,475	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	750	150	150	150	150	62.33	46750	
Site preparation	0	0	0	0	0	0.00	0	
Planting	10	0	0	0	0	990.91	9920	
Brushing	270	20	20	20	20	2,448.08	661000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1030	170	170	170	170	696.74	717670	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							4,725	
Recommended studies							0	
Total backlog program							722,395	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

1/4/2006

Mid Coast TSA
Backlog Program Table
For the 2002/03 Fiscal Year

Activities

Legal Obligations

Activities	Treatment Area Goals (ha) 2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	Plan 2002/03 Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	

Backlog Reforestation

Activities	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	10	0	0	0	0	992.00	9920	1
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	10	0	0	0	0	991.70	9,920	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							9,920	

Impeded areas

Activities	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	600	0	0	0	0	59.17	35500	1
Brushing	250	0	0	0	0	2,500.00	625000	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	850	0	0	0	0	777.06	660,500	
Prescriptions and planning dollars							0	
Total impeded areas							660,500	

Site Restoration

Activities	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	Unit Cost ($/ha)	Funding ($)	Priority
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	

Backlog Program Activities - Management Unit Total

Activities	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	600	0	0	0	0	59.17	35500	
Site preparation	0	0	0	0	0	0.00	0	
Planting	10	0	0	0	0	991.70	9920	
Brushing	250	0	0	0	0	2,499.98	625000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	860	0	0	0	0	779.55	670420	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							670,420	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Naka Tree Farm Licence 25 Block 5 (Mid-coast)
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	
Impeded areas								
Surveys	150	150	150	150	150	75.00	11250	1
Brushing	20	20	20	20	20	1,800.00	36000	2
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	170	170	170	170	170	277.94	47,250	
Prescriptions and planning dollars							4,725	1
Total impeded areas							51,975	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	150	150	150	150	150	75.00	11250	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	20	20	20	20	20	1,799.82	36000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	170	170	170	170	170	277.92	47250	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							4,725	
Recommended studies							0	
Total backlog program							51,975	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

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TFL39 - Mid Coast District Block 7
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							0	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Mid Coast District SUM TSA & TFLs
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.

The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

Tree Improvement	**Nursery Seedling Production**	**Silviculture Surveys**	**Site Preparation**	**Backlog Plant**	**Brush**	**Space**	**Prune**	**Fertilize**	**Support staff and admin**

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

Potential volume/ha gain (m3/ha/yr) provincial factors:

0.77	0	0	0	2.9	0.41	0.25	0	0.46

Years the factor will affect:

0	65	65	65	65	65	65	65	65

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

Provincial factors for estimated value gain at harvest

						5-15%	15-30%	1-5%

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

Est. short term employment rate (person days/ha) provincial factors:

0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys

Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	**Nursery Seedling Production**	**Silviculture Surveys**
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	10		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	10		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			780
Total backlog surveys from the backlog table.			750
33% of all silviculture surveys			505
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply		(A)	0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			505
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity.

Mid Coast District SUM TSA & TFLs
Performance Measures Based on Activities Planned for 2002/2003
Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improve-ment	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	10	0	505	0	10	270	295	280	0	1,430	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	1,913	7,196	4,794	0	0		13,903
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	1	0	50	0	20	705	1,168	1,271	0	143	
3.3	Estimated total full time equivalent positions (FTE)	0	0	0	0	0	4	6	7	0	1	19
4.1	**Forest Health Enhancement (ha)**											50
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											10
5.3	Est. area with secondary value provided to biodiversity (ha)											0

Mid Coast District SUM TSA & TFLs
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	1,415	110	110	110	110	958	1,355,750
Planning, prescriptions and seedlings							4,000
Backlog Program Field Activities	1,030	170	170	170	170	697	717,670
Planning, prescriptions and seedlings							4,725
Totals	2,445	280	280	280	280		2,082,145

Performance Measures

Potential total merchentable volume increment in 65 years	13,903 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	19 FTEs
Forest health enhancement area	50 ha
Planned area for specific wildlife forage or habitat maintenance	10 ha
Estimated area with secondary value provided to biodiversity	0 ha

Evaluation Rating of TFL/TSA __Mid Coast TSA__ Sustainable Harvest RMP

Category	yes	partly	no	Rating (H, M, L)
Submitted by June 27 (TFL) or July 16 (TSA).		x		
Basic data for TFL provided, area, current AAC, current harvest forecast, site/age class species profile. Long Run Sustainable Yield stated.			x	
History of past treatments provided.			x	
Text submitted identifying backlog and enhanced forestry program issues.		x		
Opportunities to increase timber supply addressed in text, e.g. short/mid/long-term, timber flow benefits. Consistent with Type 1 or 2 Analysis.	x			
Opportunities to increase timber value addressed in text, if none so stated. Consistent with Type 1 or 2 Analysis.	x			
Opportunities to increase habitat supply/biodiversity addressed in text, if none so stated. Consistent with Type 1 or 2 Analysis.		x		
Working targets proposed for volume/value/habitat.	x			
Satisfactory treatment regime table provided.	x			
Satisfactory rationale provided for the priority ranking of activities i.e. link to MP ,TSR, other . Consistent with Type 1 or 2 Analysis.	x			
Where habitat supply/biodiversity activity indicated, rationale on why the silviculture treatment specifically maintains the non-timber values.		x		
All summary tables submitted satisfactorily.	x			
Projected job outcome of proposed program stated.	x			
Opportunities to achieve FRBC performance goals Is program within reasonable range of last year's SH RMP projections for year 2002/03. Plan Comparison Table submitted with explanation for variations.	x			
Performance measures,…where TFL used local factors supporting rationale provided.	x			
SH study form completed satisfactorily		x		
Communication log documents partnership group and stakeholder discussions and issues.			x	
Other (describe)				
Overall rating	n/a	n/a	n/a	M

Mid Coast TSA
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.77	0	0	0	2.9	0.41	0.25	0	0.46	
Years the factor will affect:	65	65	65	65	65	65	65	65	65	
Provincial factors for estimated value gain at harvest							5-15%	15-30%	1-5%	
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area: Tree Improvement	Area: Nursery Seedling Production	Area: Silviculture Surveys
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	10		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	10		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			700
Total backlog surveys from the backlog table			600
33% of all silviculture surveys			429
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply		(A)	0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			429
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity.

Mid Coast TSA
Performance Measures Based on Activities Planned for 2002/2003
Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	10	0	429	0	10	250	275	270	0	1,294	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	65	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	267	0	0	0	1,912	6,663	4,469	0	0		13,310
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	1	0	43	0	20	653	1,089	1,226	0	129	
3.3	Estimated total full time equivalent positions (FTE)	0	0	0	0	0	4	6	7	0	1	18
4.1	**Forest Health Enhancement (ha)**											50
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											0
5.3	Est. area with secondary value provided to biodiversity (ha)											0

Mid Coast TSA
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	1,295	0	0	0	0	961	1,244,750
Planning, prescriptions and seedlings							0
Backlog Program Field Activities	860	0	0	0	0	780	670,420
Planning, prescriptions and seedlings							0
Totals	2,155	0	0	0	0		1,915,170

Performance Measures

Potential total merchentable volume increment in 65 years	13,310 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	18 FTEs
Forest health enhancement area	50 ha
Planned area for specific wildlife forage or habitat maintenance	0 ha
Estimated area with secondary value provided to biodiversity	0 ha

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): Mid Coast TSA

Stand Tending	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	215	700	225.6	1	1	33	70	112.1	Remote access (Heli and boat) increase the cost of survey and layout of treatment areas
Spacing	150	275	83.3	2	2	1980	2327.27	17.5	Remote access increases cost of doing business due to camp and transportation costs
Pruning	140	270	92.9	3	3	2420	2044.44	-15.5	
Fertilizing	0	0	#DIV/0!	0	0	330	n/a	#VALUE!	

Forest Health	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)
Spacing	0	0	#DIV/0!	0	0	1980	n/a	#VALUE!	
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Habitat Supply/ Biodiversity									
Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	
Non-Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): **Mid Coast TSA**

	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Legal Obligation									
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site preparation	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	10	0	-100	1	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
B/L Reforestation									
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site Prep	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	20	10	-50	1	1	1320	992	-24.8	There wasn't as much B/L planting or brushing this year.
Brushing	20	0	-100	1	0	1155	n/a	#VALUE!	
	Last Year's 2002/2003 ha	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)**
Impeded									
Surveys	539	600	11.3172542	1	1	33	59.17	79.3	More areas requiring brushing were discovered. Areas are more isolated with difficult access (heli/boat)
brushing	201	250	24.3781095	1	1	1155	2500	116.5	This increases the cost of layout and treatment as well as inpections.
Site Resoration									
Fill planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Rehab	0	0	#DIV/0!	0	0	2200	n/a	#VALUE!	
Reforestation	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	

Naka Tree Farm Licence 25
Sustainable Harvest
2002/03 – 2006/07
Resource Management Plan
Overview Document

June 2001

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Attachments

The following tables are provided for the listed Forest Districts and TFL Blocks:

Tables
- Enhanced Forestry
- Backlog Program
- Performance Measure
- Management Unit Summary
- SH Plan Comparison

TFL Blocks and Forest Districts
- TFL 25 Block 1 Jordan River – South Island Forest District
- TFL 25 Block 2 Loughborough Inlet – Campbell River Forest District
- TFL 25 Block 3 Naka Creek – Campbell River Forest District
- TFL 25 Block 5 Swanson Bay – Mid Coast Forest District
- TFL 25 Block 5 Swanson Bay – North Coast Forest District
- TFL 25 Block 6 Moresby – Queen Charlotte Forest District

Introduction

This document is submitted in response to the Ministry of Forests request for a Resource Management Plan. The background information is drawn from Management Plan 9 for Tree Farm License (TFL) 25 and Management Plan 7 for the former TFL 24. Draft Management Plan 10 for TFL 25 has been submitted to government and distributed for public review but has not been used in the preparation of this package. The Timber Supply Analysis which will support MP 10 as well as an FRBC funded Type I/II analysis is in progress. Target completion dates are Fall 2001 and Spring 2002 respectively.

The RMP covers two forest Regions (Vancouver and Prince Rupert) as well as two FRBC Regions (Pacific and Skeena/Bulkley). Block 5 of the TFL is split into North Coast Forest District and Mid Coast Forest District. The Block 1, 2, 5 and 6 portions of the RMP are administered from WFP's Mainland Islands Region office in Campbell River. Block 3 is administered from WFP's North Vancouver Island Region office in Port McNeill. The following table shows the Tenure/Forest District/WFP Region/FRBC Region splits.

Table 1 – TFL Regions and Districts

TFL Block	WFP Region	MoF Region	MoF District	FRBC Region
Block 1	Mainland/Islands	Vancouver	South Island	Pacific
Block 2	Mainland/Islands	Vancouver	Campbell River	Pacific
Block 3	North Vancouver Island	Vancouver	Campbell River	Pacific
Block 5	Mainland/Islands	Vancouver	Mid Coast	Pacific
Block 5	Mainland/Islands	Prince Rupert	North Coast	Skeena Bulkley
Block 6	Mainland/Islands	Vancouver	Queen Charlotte	Pacific

The text references TFL 25 as a whole but separate tables are provided for each combination of Forest District and TFL Block. No modifications were made to the SH spreadsheets provided with the RMP instruction package. Although they do not apply to all areas, no changes were made to the broad Performance Measures provided on these sheets as we did not have TSA or Type I/II data to justify adjustments.

1.0 Basic Data

1.1 Administrative Information

Western Forest Products Naka Tree Farm License 25 is made up of five 5 administrative units. Two are located on Vancouver Island, two on the Mainland coast between Stafford Inlet and Douglas Channel and one on Moresby Island in the Queen Charlottes. Moresby Tree Farm License 24 was consolidated into TFL 25 in 1998 as Block 6. At the same time the Port McNeill unit (Block 4) of TFL 25 was amended into TFL 6. As a result, TFL 25 has Blocks 1, 2, 3, 5 and 6.

Block #1 is a 31,000 ha unit located west of Sooke between the Strait of Juan de Fuca and the San Juan Ridge. This area has been managed as a separate sustained yield unit within the TFL since the TFL was granted in 1958. Block 1 has reasonable silviculture program costs as the area is accessible and close to a competitive "live at home" silviculture workforce.

Block #2 is a 66,645 ha unit located in Loughborough Inlet. There are three sub-units: Heydon Bay, Apple River and Frazer Bay/Stafford Lake. From 1958 to 1988 Blocks 2, 3, and 5 of the TFL were managed together as a sustained yield unit, with harvest concentrated in Blocks 2 and 3 rather than 5. As a result the Heydon Bay and Apple River sub-units are now primarily second growth with most of the conventional mature timber being found in the Frazer Bay/Stafford Lake sub-unit. Block 2 has high silviculture program costs as the area is remote, costly to access and requires either expensive camp accommodations or expensive temporary facilities. WFP also partners with the local First Nation on silviculture projects so costs are also slightly higher.

Block #3 is a 16,305 ha unit located on Vancouver Island about 50 km east of Port McNeill. As noted under Block 2, this unit was managed in conjunction with blocks 2 and 5 from 1958 to 1988. As harvest did not start in this unit until the mid-1970's, there is not as much immature area proportionate to mature timber as in Block 2. Silviculture program costs are moderate. While site access is good, the unit is remote from established communities and requires silviculture contractors to either set up temporary facilities on site or commute from either Sayward or Woss.

Block #5 is located on the mainland coast between Bella Bella and Gardiner Canal. From 1958 until 1988, this unit was managed in conjunction with units 2 and 3. As a result harvest rates were low, so there are limited second growth management opportunities. Silviculture program costs in this block are very high. Sites are remote, access is very expensive and silviculture contractors have to use expensive camp accommodations or set up temporary facilities. WFP also partners with the local First Nation on silviculture projects so costs are also slightly higher.

Block 6 is located on Moresby Island in the Queen Charlottes. This 53,360 ha unit was formerly Tree Farm License 24. The majority of the northernmost subunit (Moresby) of this Block is older second growth. Current harvest is concentrated in the Sewell Inlet subunit. Silviculture program costs in this Block are high due to remote location and expensive camp accomodations.

1.2 Land Area

The following table summarizes the total and operable area in the TFL 25 by Block as found in the approved management plans (TFL 25 and former TFL 24). The operability has been revisited for Management Plan 10 and is currently being compiled. Significant changes are not expected.

Table 2 – Total and Operable Areas

TFL Block	Total Area (ha)	Operable Forest Area (ha)
1	32,250	21,400
2	66,650	12,950
3	16,300	8,650
5	311,950	48,610
6	53,670	23,310
Summary	480,820	114,960

1.3 Annual Allowable Cut (AAC) and Harvest Forecast

The BC Chief Forester has determined that each TFL Block be managed as a sustained yield unit with it's own yield analysis and AAC. The current AAC and a range of long-run sustained yield harvest rates (LRSY) by block are as follows:

Table 3 – MP 9 AAC and LRSY

TFL Block	AAC	Commercial Thinning	LRSY
1	175,000	10,000	157,000-173,000
2	92,000		65,000
3	55,000		37-54,000
5	255,000		215,000
6	115,000		181-200,000

1.4 Site Class Profile

The site class breakdown by TFL Block is dependent on the site index method used in the individual timber supply analysis. TFL Blocks 1, 3, and 6 site classes are based on WFP's ecological mapping and permanent sample plots. Blocks 2 and 5 are based on Ministry of Forest's methodology. The MoF data will be updated once WFP has completed ecological classification of Block 5. The current site index assignments by TFL Block are as follows:

Table 4 – Operable Area

TFL Block	Operable Area by Site Class (ha)		
	Good	Medium	Poor
1	6,924.6	11,433.5	3,313.1
2	1,139.3	10,301.5	1,668.0
3	2,542.4	5,327.7	1,024.6
5	5,511.4	33,059.0	10,038.0
6	7,743.0	14,439.0	2,362.0

1.5 Age Class Profile

The age class profiles from the current management plan forest inventory (current to Jan. 1, 1995) for the operable forest land is as follows:

Table 5 – Age Class Distribution

TFL Block	Immature (1- 140 Years)	Mature (141+ Years)
1	74%	26%
2	50%	50%
3	34%	66%
5	9%	91%
6	71%	28%
Total TFL	40%	60%

Since 1995 approximately 4,350 ha of predominantly mature timber has been harvested which would reduce the mature to 56% and increase the immature to 44% of the operable area.

1.6 Species Profile

The species profile as of January 1, 1995 was as follows:

Table 6 – Species Distribution

Block	**Douglas-Fir**	**Red and Yellow Cedar**	**Western Hemlock**	**Balsam**	**Spruce**	**Deciduous**
1	45%	17%	33%	2%	0%	3%
2	4%	32%	48%	14%	0%	2%
3	2%	36%	56%	6%	0%	0%
5	0%	42%	36%	18%	2%	2%
6	0%	15%	46%	0%	30%	9%
TFL	10%	28%	45%	8%	6%	3%

Checks of harvested volume since January 1, 1995 indicate that the inventory has been harvested according to the profile.

2.0 Timber Supply Issues

2.1 Timber Quantity

The TFL 25 Management Plan 10 Timber Supply Analysis is in process and due for submission in the fall. The TSA will fully incorporate the Forest Practices Code as well as new protected or protection areas, and will use spatial modeling to project sustainable development. The previous Management Plan projected the following:

Block #1

The harvest in this unit is 175,000 m3/year in the first decade. This rate will decline marginally to between 160,000 and 173,000 by decade 19 depending on the management assumptions used. This block is in rapid transition to a second growth based harvest structure so the future flow of timber from the block can be positively affected by enhanced silviculture treatments.

Block #2

The harvest in this unit is 92,000 m^3/year in the first decade declining to 60-65,000 m^3/year in decade 5. Current and future harvest levels incorporate a significant helicopter volume. The high proportion of second growth in this unit means that the future flow of timber from the block can be positively affected by enhanced silviculture treatments.

Block #3

The harvest in decade one is 55,000 m^3/year declining in decade two to 49,000 m^3/year. There is a significant reserve of mature timber in this unit.

Block #5

The harvest is 255,000 m^3/year declining to a LRSY of 212,000 m^3/year in decade two. The sustainable harvest level in this unit has been negatively impacted by the creation of the Spirit Bear Protection Area. A significant proportion of the remaining volume in this unit is helicopter based.

Block #6

The approved harvest is 115,000 m^3/year declining to 98,800 m^3/year in decade two, remaining at that level until 2059 when second growth areas begin to reach maturity. The projected harvest level then begins to rise towards a LRSY of between 170,000 and 190,000 m3/year depending on management and landbase assumptions. This unit has a significant age class gap resulting from the establishment of the South Moresby National Park reserve. Enhanced silviculture has the potential to bring the current growth increment to merchantable size more quickly.

Forest policy and factors affecting harvest rates have changed since the Timber Supply Analysis supporting the current TFL 25 annual allowable cut was completed. There have been operational constraints as a result of the implementation of the Forest Practices Code, new direction provided by regional planning processes (CCLRMP and VISLUP) and new landscape level policies such as the Identified Wildlife Management Strategy and Landscape Unit Planning. Blocks 1 and 3 are affected by the VISLUP while Blocks 2 and 5 are subject to initial and future CCLRMP recommendations. Block 5 has been impacted by the declaration of the Spirit Bear Protection Area and will be further affected by the final form that Ecosystem Based Forest Management takes within the various Option Areas.

It is anticipated that these new factors will put downward pressure on the AAC options that will be provided as part of the Timber Supply Analysis.

2.2 Timber Quality

The last Timber Supply Analysis projected that the bulk of the harvest volume in the short to mid-term, would continue to come from mature forests. In the mid to long term, harvest volumes will depend on second growth. If projected rotations do not allow time for the development of quality characteristics such as small knots, clear wood and mature fibre, there could be a reduction in stand value not only on a cubic meter basis but also on a per hectare basis.

WFP's growth and yield work indicates that rotations can be extended without a significant impact on LRSY as long as there is a reasonable age class distribution. Longer rotations are proposed in order to produce stands with an average diameter in the 40 to 45 cm dbh range.

A timber quality analysis produced for the current TFL 25 Management Plan compared second growth log grades predicted by the model to produced log grades from second growth logging. The analysis indicated that it was possible to produce a second growth log grade profile similar to our experienced production from second growth stands if an average diameter of between 35 and 45 cm was targeted.

The TFL 25 analysis confirmed that by extending rotations it would be possible to produce these diameters and improve log grades. Overall, the minor loss in quantity from a longer rotation is more than offset by an increase in quality and future value.

The analysis concluded that there was only weak economic justification for silviculture treatments that increased second growth diameters when compared to the benefits of longer rotations, However, it did note that pruning would be necessary if there was a desire to produce the highest value grades.

2.3 Forest Health

There have been minor forest health and protection issues over the history of TFL 25. Block 1 has scattered *Phellinus* and *Armillaria* root rot pockets. The other TFL Blocks have insignificant *Armillaria* and no *Phellinus* issues.

The most visible insect pests have been the Black Headed Budworm on the Queen Charlotte Island and Vancouver Island and the Spruce Shoot Weevil on Vancouver Island and the Mainland. The budworm has appeared on a regular ten to fifteen year cycle and has caused significant defoliation but little mortality. Volume losses have been factored into AAC calculations through the use of growth and yield data which includes depressed growth during insect attacks. The Canadian Forest Service indicated that the current outbreak in Block 6 collapsed in 2000.

The Sitka Spruce Shoot Weevil restricts the area where Sitka Spruce can be regenerated. The Weevil is being addressed through WFP's Saanich Forestry Center Tree Improvement Program which is cooperating with MOF Breeders to produce and evaluate weevil resistant seed sources.

Hemlock Dwarf Mistletoe is common in mature forests but has not been debilitating to regenerating stands as long as the predominant silvicultural system has been clearcut or clearcut with reserves. As management moves to various levels of retention, the impact of mistletoe on developing stands may increase. In clearcut or clearcut with reserve areas, mistletoe is addressed through regular and residual falling.

Deer browse of young trees is a minor concern in Block 1 and a serious problem in Block 6. In Block 6 deer target western red cedar seedlings until they reach breast height. This issue is being addressed through seedling protection at the time of planting. There is also minor second growth damage caused by porcupines in Block 5.

There are no plans for FRBC funded pest control programs. Endemic health issues are monitored through regular silviculture surveys. Atypical pest outbreaks are monitored with special surveys.

2.4 Habitat Supply

Landscape Unit Planning processes are being discussed in most TFL Blocks. These processes have been very slow to get of the ground. Initial Landscape Unit Planning will establish Old Growth Management Areas and target Wildlife Tree retention percentages. Stand level biodiversity initiatives, including Wildlife Tree patches, are currently incorporated in harvest planning. A brief summary of habitat issues by supply block is listed below:

Block 1

Discussions with MoELP are ongoing to address potential needs for Marbled Murrelets and ungulate winter ranges.

Block 2

Ungulate winter range and mountain goat winter range issues have been identified in a number of locations. Grizzly Bear habitat may be an issue on certain sites, but will be addressed in new silviculture prescriptions through grizzly bear stocking standards and riparian reserves. A Total Resource Plan for all species has been prepared for this Block.

Block 3

No significant wildlife issues have been identified.

Blocks 5

A number of wildlife studies have been conducted by WFP in support of management planning. Grizzly Bear habitat may be an issue on certain sites in Block 5, but will be addressed in new silviculture prescriptions through grizzly bear stocking standards and riparian reserves. WFP has been supporting Kermode research in Block 5 to better understand the higher instance of this recessive trait in black bears in the area.

Block 6

A number of biodiversity or wildlife studies have been conducted by WFP on a watershed basis. A number of habitat modification projects have been proposed under the FRBC EEV program but none have been started.

To date the WFP Sustainable Harvest Program has not focussed on habitat supply issues. There are no plans to push the Habitat Supply Program until program direction and overlaps betweem the EEV and SH programs are clearer.

3.0 Enhanced Backlog and Intensive Silviculture

3.1 History

A summary of historical silviculture work on TFL 25 is attached in appendix 1.

3.2 Effect on Previous Timber Supply Analyses

Brushing

Brushing has been conducted as a routine treatment to maintain conifer dominance on sites. As such, the historic brushing program has had no effect on the timber supply.

Pre Commercial Thinning (PCT)

The TFL 25 MP 9 Analysis assumptions incorporated historical levels of PCT into the base case harvest determination. The analysis also conducted sensitivity analyses, thinning up to 50-75% of the available projected growing stock in several supply blocks (1, 2, 3). The general impact on timber supply harvest volume level was slightly negative or positive depending on the specific assumptions for a given TFL Block.

PCT benefits include favourable values and harvest costs associated with the larger piece sizes resulting from PCT. Blocks 2 and 6 have degrees of age class imbalance, which will additionally benefit from PCT. Economic analyses at the stand level in TFL Management Plan 9 indicated positive net present value from PCT on good sites.

Pruning

The TFL 25 Timber Supply Analysis did not model pruning as pruning targets wood quality rather than volume. The only comment was that higher log grades would not be possible without pruning however a cost/benefit analysis for this was not done.

Fertilization

Fertilization of second growth mixed stands of cedar and hemlock that are dominated by salal show significant growth increases. Fertilization will also add volume and value to PCT and CT.

Block 1 contains some cedar–hemlock-salal sites that are nutrient deficient and will benefit from fertilization. MP 9 modeling of fertilization of all projected PCT and CT in Block 1 demonstrated that harvest levels were maintained but not increased. Montane screening trials have been encouraging. It is proposed that further screening trials be established in this Block. There may be opportunities for late rotational fertilization prior to harvest in second growth stands.

Blocks 2 and 3 contain some cedar-hemlock-salal sites that are nutrient deficient and will benefit from fertilization as well as managed second growth stands that have been spaced and pruned.

Block 5 has not traditionally been considered a good area to fertilize due to poor access. WFP established fertilizer screen trials in this area in spring 2001.

Block 6 has been extensively foliar sampled and has demonstrated endemic nutrient deficiencies. PCT and fertilization in this block will contribute to alleviating age class imbalance. Open grown spruce stands in this block have heavy limbs which reduce log value. Small operational trials are proposed to see if wood quality can be improved with pruning.

4.0 Future Timber Supply

4.1 Timber Supply Quantity and Quality Improvement

Conventional backlog treatments or intensive treatments such as precommercial thinning or convention stand fertilization have little impact on LRSY as long as there is a manageable immature age class distribution. If forest management policies create an immature age class imbalance, these treatments can smooth but not increase overall harvest flows.

SCHIRP research indicates that fertilization of young hemlock/cedar stands to attain crown closure can have a positive effect on site productivity and harvest rates, especially if the treatments result in permanent growth effects. Fertilization of PCT or CT areas can capture the increase in growing space and compensate for potential volume impacts from PCT.

However, 'intensive' basic practices which decrease regeneration delay, increase site occupancy, hasten free-growing and green-up or permanently increase site productivity could have the greatest effect on long term yields. The volume forecasts which WFP growth and yield models use are reduced by approximately 20% to recognize operational factors that reduce stocking and final volume on an area basis. It would be possible to reduce this Operational Adjustment Factor (OAF) through genetic improvement and an aggressive stocking and brushing program. The issue of an 'enhanced' basic program has been raised in the past but never approved for implementation by the Ministry of Forests or FRBC. An "enhanced" basic program is not proposed as part of this RMP.

5.0 Proposed Program

The proposed sustainable harvest programs have been attached for each TFL Block and Forest District. These programs cover currently eligible impeded backlog and enhanced silviculture projects. The focus of the program is to first address backlog issues and then focus on enhanced opportunities. The enhanced program has two goals. The first is to provide employment opportunities to First Nations in areas of chronic under-employment. The second, in areas where under employment is not a significant issue, is to focus on treatments which will maximize volume production or address age class imbalances.

Silviculture studies are proposed under the SH envelope to continue work on native grass seed for revegetation purposes in Block 1 (South Island) and to monitor fertilization screening trials in block 5 (North Coast).

6.0 Other Considerations

The provincial enhanced silviculture program has historically had a social component. The employment and social values were given even greater importance under the initial FRBC mandate. To date licensee and government programs have ensured that a proportion of the silviculture program was directed to local communities and First Nations.

Western Forest Products is encouraging the development of local First Nations silviculture contractors through the award of silviculture contracts at market prices. It is our expectation that RMPs will be able to retain sufficient flexibility to incorporate these programs and partnerships into new programs.

Appendix I

TREE FARM LICENCE 25
Historical Summary of Activities

Year	Denuded (ha)	Planted (ha)	No. Trees Planted	Juvenile Spacing (ha)	Brushing (ha)	Prescribed Burning (ha)	Mechanical Site Prep. (ha)	Fertilization (ha)	Pruning (ha)	Commercial Thinning (ha)
Pre 1965	6062.8	2628.2	2531100	0.0	153.1	711.1	36.5	0.0	0.0	0.0
1965	884.4	346.4	298500	0.0	4.1	564.9	0.0	0.0	0.0	0.0
1966	999.9	458.5	432800	40.1	1.2	341.2	0.0	0.0	0.0	0.0
1967	798.3	577.4	547650	0.0	623.0	477.3	0.0	0.0	0.0	0.0
1968	727.4	630.2	645250	0.0	143.2	308.4	0.0	0.0	0.0	0.0
1969	766.3	607.7	446100	15.8	62.8	321.1	0.0	0.0	0.0	0.0
1970	741.6	418.8	341450	0.0	279.5	305.6	0.0	0.0	0.0	0.0
1971	834.7	671.3	586700	0.0	37.0	187.6	0.0	0.0	0.0	0.0
1972	918.5	290.6	295300	0.0	11.3	284.3	0.0	0.0	0.0	0.0
1973	1084.5	942.3	772450	239.8	320.8	199.0	0.0	0.0	0.0	16.2
1974	911.4	444.1	363850	224.6	0.0	761.3	0.0	0.0	0.0	0.0
1975	729.8	214.4	199450	0.0	2.8	32.0	0.0	0.0	0.0	0.0
1976	1143.7	902.5	807250	53.5	4.5	674.5	2.4	0.0	0.0	0.0
1977	824.1	876.8	757550	535.1	15.3	0.0	0.0	0.0	0.0	0.0
1978	978.4	626.0	555600	569.5	8.0	390.0	14.0	522.5	0.0	29.2
1979	838.3	922.6	749000	620.5	35.0	663.0	0.0	40.0	0.0	40.0
1980	829.5	586.7	493650	667.3	79.9	256.0	12.0	737.5	0.0	60.0
1981	650.4	924.1	803900	615.2	31.6	342.5	0.0	0.0	0.0	34.7
1982	787.2	851.8	827700	0.0	0.0	0.0	0.0	223.8	0.0	0.0
1983	1236.1	757.7	669050	161.2	186.7	290.5	0.0	0.0	0.0	0.0
1984	1180.3	846.6	809000	99.0	376.9	118.4	0.0	0.0	0.0	0.0
1985	1010.1	576.0	522050	322.4	716.0	109.0	0.0	0.0	0.0	0.0
1986	985.7	748.5	630950	335.7	614.5	489.9	6.9	0.0	4.5	0.0
1987	1213.6	1605.4	1297750	485.5	712.8	100.7	0.0	0.0	17.2	0.0
1988	1239.6	1249.5	982850	57.4	928.7	70.0	26.3	22.6	11.6	0.0
1989	773.0	1026.1	735600	325.7	1314.5	165.8	31.2	0.0	6.6	0.0
1990	1078.5	847.0	712350	433.4	974.1	107.4	0.0	0.0	38.9	0.0
1991	796.2	1157.8	842850	705.6	33.1	38.4	0.0	0.0	3.2	0.0
1992	834.8	820.2	673900	869.0	2.1	19.0	0.0	1304.0	38.0	0.0
1993	907.6	733.1	639750	231.5	111.5	16.4	0.0	0.0	47.3	0.0
1994	1020.0	652.0	546000	511.5	338.7	9.5	38.1	0.0	157.8	0.0
1995	776.5	897.2	853050	721.4	515.1	48.5	0.0	581.4	308.6	0.0
1996	924.2	1103.8	1089750	319.8	168.9	0.0	8.5	1947.2	165.0	16.2
1997	850.5	904.9	951900	483.2	269.0	21.5	3.6	1061.9	313.9	25.0
1998	448.4	635.2	652250	404.5	440.7	0.0	10.0	0.0	236.1	26.4
1999	619.4	358.1	413000	234.3	143.7	0.0	14.8	2641.3	136.0	0.0
2000	734.6	744.2	752500	211.9	52.9	11.6	7.1	0.0	144.1	0.0
TOTAL	**38140.3**	**29583.7**	**26229800**	**10494.4**	**9713**	**8436.4**	**211.4**	**9082.2**	**1628.8**	**247.7**

- Historical Summary amended to remove the former TFL 25 Block 4 and include the former TFL 24.

Appendix I

TREE FARM LICENCE 25
Historical Summary of Activities

Year	Denuded (ha)	Planted (ha)	No. Trees Planted	Juvenile Spacing (ha)	Brushing (ha)	Prescribed Burning (ha)	Mechanical Site Prep. (ha)	Fertilization (ha)	Pruning (ha)	Commercial Thinning (ha)
Pre 1965	6062.8	2628.2	2531100	0.0	153.1	711.1	36.5	0.0	0.0	0.0
1965	884.4	346.4	298500	0.0	4.1	564.9	0.0	0.0	0.0	0.0
1966	999.9	458.5	432800	40.1	1.2	341.2	0.0	0.0	0.0	0.0
1967	798.3	577.4	547650	0.0	623.0	477.3	0.0	0.0	0.0	0.0
1968	727.4	630.2	645250	0.0	143.2	308.4	0.0	0.0	0.0	0.0
1969	766.3	607.7	446100	15.8	62.8	321.1	0.0	0.0	0.0	0.0
1970	741.6	418.8	341450	0.0	279.5	305.6	0.0	0.0	0.0	0.0
1971	834.7	671.3	586700	0.0	37.0	187.6	0.0	0.0	0.0	0.0
1972	918.5	290.6	295300	0.0	11.3	284.3	0.0	0.0	0.0	0.0
1973	1084.5	942.3	772450	239.8	320.8	199.0	0.0	0.0	0.0	16.2
1974	911.4	444.1	363850	224.6	0.0	761.3	0.0	0.0	0.0	0.0
1975	729.8	214.4	199450	0.0	2.8	32.0	0.0	0.0	0.0	0.0
1976	1143.7	902.5	807250	53.5	4.5	674.5	2.4	0.0	0.0	0.0
1977	824.1	876.8	757550	535.1	15.3	0.0	0.0	0.0	0.0	0.0
1978	978.4	626.0	555600	569.5	8.0	390.0	14.0	522.5	0.0	29.2
1979	838.3	922.6	749000	620.5	35.0	663.0	0.0	40.0	0.0	40.0
1980	829.5	586.7	493650	667.3	79.9	256.0	12.0	737.5	0.0	60.0
1981	650.4	924.1	803900	615.2	31.6	342.5	0.0	0.0	0.0	34.7
1982	787.2	851.8	827700	0.0	0.0	0.0	0.0	223.8	0.0	0.0
1983	1236.1	757.7	669050	161.2	186.7	290.5	0.0	0.0	0.0	0.0
1984	1180.3	846.6	809000	99.0	376.9	118.4	0.0	0.0	0.0	0.0
1985	1010.1	576.0	522050	322.4	716.0	109.0	0.0	0.0	0.0	0.0
1986	985.7	748.5	630950	335.7	614.5	489.9	6.9	0.0	4.5	0.0
1987	1213.6	1605.4	1297750	485.5	712.8	100.7	0.0	0.0	17.2	0.0
1988	1239.6	1249.5	982850	57.4	928.7	70.0	26.3	22.6	11.6	0.0
1989	773.0	1026.1	735600	325.7	1314.5	165.8	31.2	0.0	6.6	0.0
1990	1078.5	847.0	712350	433.4	974.1	107.4	0.0	0.0	38.9	0.0
1991	796.2	1157.8	842850	705.6	33.1	38.4	0.0	0.0	3.2	0.0
1992	834.8	820.2	673900	869.0	2.1	19.0	0.0	1304.0	38.0	0.0
1993	907.6	733.1	639750	231.5	111.5	16.4	0.0	0.0	47.3	0.0
1994	1020.0	652.0	546000	511.5	338.7	9.5	38.1	0.0	157.8	0.0
1995	776.5	897.2	853050	721.4	515.1	48.5	0.0	581.4	308.6	0.0
1996	924.2	1103.8	1089750	319.8	168.9	0.0	8.5	1947.2	165.0	16.2
1997	850.5	904.9	951900	483.2	269.0	21.5	3.6	1061.9	313.9	25.0
1998	448.4	635.2	652250	404.5	440.7	0.0	10.0	0.0	236.1	26.4
1999	619.4	358.1	413000	234.3	143.7	0.0	14.8	2641.3	136.0	0.0
2000	734.6	744.2	752500	211.9	52.9	11.6	7.1	0.0	144.1	0.0
TOTAL	38140.3	29583.7	26229800	10494.4	9713	8436.4	211.4	9082.2	1628.8	247.7

- Historical Summary amended to remove the former TFL 25 Block 4 and include the former TFL 24.

Evaluation Rating of TFL/TSA TFL 25 Sustainable Harvest RMP

Category	yes	partly	no	Rating (H, M, L)
Submitted by June 27 (TFL) or July 16 (TSA).	x			
Basic data for TFL provided, area, current AAC, current harvest forecast, site/age class species profile. Long Run Sustainable Yield stated.	x			
History of past treatments provided.	x			
Text submitted identifying backlog and enhanced forestry program issues.	x			
Opportunities to increase timber supply addressed in text, e.g. short/mid/long-term, timber flow benefits. Consistent with Type 1 or 2 Analysis.	x			
Opportunities to increase timber value addressed in text, if none so stated. Consistent with Type 1 or 2 Analysis.	x			
Opportunities to increase habitat supply/biodiversity addressed in text, if none so stated. Consistent with Type 1 or 2 Analysis.	x			
Working targets proposed for volume/value/habitat.	x			
Satisfactory treatment regime table provided.	x			
Satisfactory rationale provided for the priority ranking of activities i.e. link to MP ,TSR, other . Consistent with Type 1 or 2 Analysis.	x			
Where habitat supply/biodiversity activity indicated, rationale on why the silviculture treatment specifically maintains the non-timber values.	x			
All summary tables submitted satisfactorily.	x			
Projected job outcome of proposed program stated.	x			
Opportunities to achieve FRBC performance goals Is program within reasonable range of last year's SH RMP projections for year 2002/03. Plan Comparison Table submitted with explanation for variations.	x			
Performance measures,…where TFL used local factors supporting rationale provided.	x			
SH study form completed satisfactorily	x			
Communication log documents partnership group and stakeholder discussions and issues.			x	
Other (describe)				
Overall rating	n/a	n/a	n/a	H

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** Naka Tree Farm Licence 25 Block 5 (Mid-coast)

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

Naka Tree Farm Licence 25 Block 5 (Mid-coast)
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Fertilizing	0	0	0	0	0	0.00	0	
Other	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Planning and prescriptions							0	
Total dollars							0	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	0	0	0	0	0	0.00	0	
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Fertilizing	0	0	0	0	0	0.00	0	
Other stand tending activities	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Planning and prescriptions							0	
Studies funding							0	
Total dollars							0	

1/4/2006

Naka Tree Farm Licence 25 Block 5 (Mid-coast)
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	
Impeded areas								
Surveys	150	150	150	150	150	75.00	11250	1
Brushing	20	20	20	20	20	1,800.00	36000	2
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	170	170	170	170	170	277.94	47,250	
Prescriptions and planning dollars							4,725	1
Total impeded areas							51,975	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	150	150	150	150	150	75.00	11250	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	20	20	20	20	20	1,799.82	36000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	170	170	170	170	170	277.92	47250	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							4,725	
Recommended studies							0	
Total backlog program							51,975	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Naka Tree Farm Licence 25 Block 5 (Mid-coast)
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.

The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

Tree Improvement	**Nursery Seedling Production**	**Silviculture Surveys**	**Site Preparation**	**Backlog Plant**	**Brush**	**Space**	**Prune**	**Fertilize**	**Support staff and admin**

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)

Estimates of annual growth rate increase from each type of treatment over no treatment.

Potential volume/ha gain (m3/ha/yr) provincial factors:

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
0.77	0	0	0	2.9	0.41	0.25	0	0.46	

Years the factor will affect:

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
0	65	65	65	65	65	65	65	65	

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

Provincial factors for estimated value gain at harvest

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
						5-15%	15-30%	1-5%	

3) Corporate commitment to employment

Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

Est. short term employment rate (person days/ha) provincial factors:

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys

Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	**Nursery Seedling Production**	**Silviculture Surveys**
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	0		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	0		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			0
Total backlog surveys from the backlog table.			150
33% of all silviculture surveys			50
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply			(A) 0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			50
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			

Habitat Supply

Melp staff professional judgement used to estimate this performance measure Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity.	

Naka Tree Farm Licence 25 Block 5 (Mid-coast)
Performance Measures Based on Activities Planned for 2002/2003
Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	0	0	50	0	0	20	0	0	0	70	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	1	533	0	0	0		534
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	0	0	5	0	0	52	0	0	0	7	
3.3	Estimated total full time equivalent positions (FTE)	0	0	0	0	0	0	0	0	0	0	0
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											0
5.3	Est. area with secondary value provided to biodiversity (ha)											0

Naka Tree Farm Licence 25 Block 5 (Mid-coast)
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities							
Planning, prescriptions and seedlings	0	0	0	0	0	0	0
							0
Backlog Program Field Activities							
Planning, prescriptions and seedlings	170	170	170	170	170	278	47,250
							4,725
Totals	170	170	170	170	170		51,975

Performance Measures	
Potential total merchentable volume increment in 65 years	534 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	0 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	0 ha
Estimated area with secondary value provided to biodiversity	0 ha

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): TFL 25 Block 5 Mid Coast

Stand Tending	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	0	0	#DIV/0!	0	0	33	0	-100.0	
Spacing	0	0	#DIV/0!	0	0	1980	0	-100.0	
Pruning	0	0	#DIV/0!	0	0	2420	0	-100.0	
Fertilizing	0	0	#DIV/0!	0	0	330	0	-100.0	
Forest Health	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)
Spacing	0	0	#DIV/0!	0	0	1980	0	-100.0	
Pruning	0	0	#DIV/0!	0	0	2420	0	-100.0	
Habitat Supply/ Biodiversity									
Riparian	0	0	#DIV/0!	0	0	3000	0	-100.0	
Non-Riparian	0	0	#DIV/0!	0	0	3000	0	-100.0	

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): TFL 25 Block 5 Mid Coast

	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Legal Obligation									
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site preparation	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
B/L Reforestation									
Surveys	40	n/a	#VALUE!	1	1	33	n/a	#VALUE!	Areas completed in 2001/02.
Site Prep	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Impeded									
Surveys	150	150	0	2	1	33	75	127.3	Remote, poor access, high accomodation costs.
brushing	20	20	0	1	2	1155	1800	55.8	Remote, poor access, high accomodation costs.
Site Resoration									
Fill planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Rehab	0	0	#DIV/0!	0	0	2200	n/a	#VALUE!	
Reforestation	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	

RENEWAL INVESTMENT CORP.

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June 20, 2001

RMP 2002/03 Supporting Documentation: Weyerhaeuser Operations block 7 within Mid Coast Forest District

The Type 2 timber supply analysis of incremental silviculture opportunities in TFL 39, prepared March, 2001 and the draft Management Plan # 8 provided the guidance in preparing this RMP.

The following provides a summary of how the recommended silviculture program from the Type 2 analysis will be implemented:

BACKLOG PROGRAM

There is no suitable area for the Backlog Program.

Enhanced Program

Surveys
Enhanced surveys of 80 hectares per year will be needed to locate the annual treatment area of 40 ha for enhanced activities of spacing, pruning, and wildlife habitat enhancement. This estimate is based on historic survey levels and the anticipation that approximately double the net annual treatment area will require surveying through reconnaissance or plot surveys to find the highest priority areas suitable for treatment.

Spacing
Each year approximately 20 ha of spacing is anticipated, targeting hemlock stands >8,000 sph, below 600 m of elevation to densities of 1200-1500 sph. With this regime alternative species such as Cw will be favoured where ecologically suitable. Target stands over the next few years will come from appraisal stands recently declared free growing.

Pruning
Each year approximately 10 ha of pruning is anticipated. Stands will be selected from areas spaced to 1200 sph. Target pruning densities are 600-800 sph of the best crop trees leaving a minimum of 60% live crown to ensure dominance is maintained. Concurrent hand fertilization might be prescribed. Pruning is considered a low priority in the Type 2 analysis.

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Habitat Supply and Biodiversity Enhancement

Approximately 10 ha of grizzly bear habitat creation is anticipated for each year. Riparian reserve areas and possibly upland areas will be spaced into conifer clusters as per existing guidelines.

Mike Fidgeon, RPF
Renewal Investment Corp.

Evaluation Rating of TFL/TSA TFL 39 Block 7 **Sustainable Harvest RMP**

Category	yes	partly	no	Rating (H, M, L)
Submitted by June 27 (TFL) or July 16 (TSA).	x			
Basic data for TFL provided, area, current AAC, current harvest forecast, site/age class species profile. Long Run Sustainable Yield stated.	x			
History of past treatments provided.	x			
Text submitted identifying backlog and enhanced forestry program issues.	x			
Opportunities to increase timber supply addressed in text, e.g. short/mid/long-term, timber flow benefits. Consistent with Type 1 or 2 Analysis.	x			
Opportunities to increase timber value addressed in text, if none so stated. Consistent with Type 1 or 2 Analysis.	x			
Opportunities to increase habitat supply/biodiversity addressed in text, if none so stated. Consistent with Type 1 or 2 Analysis.	x			
Working targets proposed for volume/value/habitat.	x			
Satisfactory treatment regime table provided.	x			
Satisfactory rationale provided for the priority ranking of activities i.e. link to MP ,TSR, other . Consistent with Type 1 or 2 Analysis.	x			
Where habitat supply/biodiversity activity indicated, rationale on why the silviculture treatment specifically maintains the non-timber values.	x			
All summary tables submitted satisfactorily.	x			
Projected job outcome of proposed program stated.	x			
Opportunities to achieve FRBC performance goals Is program within reasonable range of last year's SH RMP projections for year 2002/03. Plan Comparison Table submitted with explanation for variations.	x			
Performance measures,…where TFL used local factors supporting rationale provided.	x			
SH study form completed satisfactorily	x			
Communication log documents partnership group and stakeholder discussions and issues.			x	
Other (describe)				
Overall rating	n/a	n/a	n/a	H

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at
http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** TFL39 - Mid Coast District Block 7

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

TFL39 - Mid Coast District Block 7
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	80	80	80	80	80	75.00	6000	2
Spacing	20	20	20	20	20	2500.00	50000	2
Pruning	10	10	10	10	10	2500.00	25000	3
Fertilizing	0	0	0	0	0	0.00	0	
Other	0	0	0	0	0	0.00	0	
Totals hectares	110	110	110	110	110	736.35	81,000	
Planning and prescriptions							4,000	2
Total dollars							85,000	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	10	10	10	10	10	3,000.00	30000	1
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	10	10	10	10	10	2,999.70	30,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	80	80	80	80	80	75.00	6,000	
Spacing	20	20	20	20	20	2,499.88	50,000	
Pruning	10	10	10	10	10	2,499.75	25,000	
Fertilizing	0	0	0	0	0	0.00	0	
Other stand tending activities	10	10	10	10	10	2,998.80	30000	
Totals hectares	120	110	110	110	110	924.95	111,000	
Planning and prescriptions							4,000	
Studies funding							0	
Total dollars							115,000	

TFL39 - Mid Coast District Block 7
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							0	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

1/4/2006

TFL39 - Mid Coast District Block 7
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on Type 1, Type 2 silviculture strategy & Provincial Default Values

The following default provincial factors may be replaced by management unit specific factors.

The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.71	0	0	0	2.9	0.63	0	0	0.42	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	
Provincial factors for estimated value gain at harvest							5-15%	15%	5%	
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	1.5	2	2.43	4.14	5.5	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys

Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	Nursery Seedling Production	Silviculture Surveys
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	0		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	0		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			80
Total backlog surveys from the backlog table.			0
33% of all silviculture surveys			26
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply (A)			0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			26
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			

Habitat Supply
Melp staff professional judgement used to estimate this performance measure

Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity.	10

TFL39 - Mid Coast District Block 7
Performance Measures Based on Activities Planned for 2002/2003
Based on Type 1, Type 2 silviculture strategy & Provincial Default Values

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	0	0	26	0	0	0	20	10	0	66	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.42		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	1	0	325	0	0		326
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	0.15	0.05		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	1.5	2	2.43	4.14	5.5	0.18	0.1	
3.2	Estimated total employment (person days/year)	0	0	3	0	0	0	83	55	0	7	
3.3	Estimated total full time equivalent positions (FTE)	0	0	0	0	0	0	0	0	0	0	1
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											10
5.3	Est. area with secondary value provided to biodiversity (ha)											10

TFL39 - Mid Coast District Block 7
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities							
Planning, prescriptions and seedlings	120	110	110	110	110	925	111,000
							4,000
Backlog Program Field Activities							
Planning, prescriptions and seedlings	0	0	0	0	0	0	0
							0
Totals	120	110	110	110	110		115,000

Performance Measures

Potential total merchentable volume increment in 65 years	326 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	1 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	10 ha
Estimated area with secondary value provided to biodiversity	10 ha

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block TFL 39 block 7 within Mid-Coast Forest District

Legal Ob	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site prep	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	NO BACKLOG PROGRAM
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
B/L Reforestation									
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site Prep	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	

Impeded	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
Site Resoration									
Fill planti	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Rehab	0	0	#DIV/0!	0	0	2200	n/a	#VALUE!	
Reforest	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): TFL 39 block 7 within Mid-Coast Forest District

Stand Tendi	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	60	80	33.3	1	2	33	75	127.3	Spacing and pruning are 2 and 3 priority. Habitat supply surveys are high priority. High costs due to flights and camp costs.
Spacing	20	20	0.0	1	2	1980	2500	26.3	High costs due isolated location . High flight, barge trucks, and camp costs
Pruning	10	10	0.0	2	3	2420	2500	3.3	
Fertilizing	0	0	#DIV/0!	0	0	330	n/a	#VALUE!	

Forest Healt	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)
Spacing	0	0	#DIV/0!	0	0	1980	n/a	#VALUE!	
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Habitat Supply/ Biodiversity									
Riparian	10	10	0.0	2	1	3000	3000	0.0	
Non-Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	

2002/03-2006/07 Sustainable Harvest Component of the Port McNeill Forest District Resource Management Plan

Prepared By:

__________________________ Date______________
Andy Waines, RPF
(assisted by Amy Beetham, RPF)
Silviculture Foresters

__________________________ Date______________
Glenn Smith, RPF
Silviculture Officer

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Operations Manager,

Approved by: __________________________ Date______________
Jack Dryburgh, RPF
District Manager,

June 2001

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1.0 RMP Introduction and PMFD Summary Text

Resource Management Plan:

The mandate of Forest Renewal BC is to plan and implement a program of investment to renew the forest economy of British Columbia by enhancing the productive capacity and environmental values of forest lands, creating jobs, providing training for forest workers and strengthening local communities that depend on the forest industry.

The purpose and function of the Ministry of Forests is to encourage maximum productivity of the forest and range resources in the province and to manage, protect and conserve the forest and range resources of the Crown, while considering the immediate and long term economic and social benefits they may confer on the province. The Ministry is also charged with planning the use of forest and range resources of the Crown, so that the production of timber and forage, the harvesting of timber, grazing of livestock and the realisation of fisheries, wildlife, water, outdoor recreation and other natural resource values are co-ordinated and integrated, in consultation and co-operation with other ministries and agencies of the Crown and the private sector.[1]

Resource Management Plans are intended to establish resource objectives and priorities, identify resource investment opportunities by activity and anticipated resource outputs, as well as identify any critical work to be done in the next fiscal year. This Resource Management Plan represents the sustainable harvest (SH) component for the Port McNeill Forest District planning unit.

Port McNeill Forest District's RMP:

The Port McNeill Forest District covers an area of approximately 1.8 million hectares with an annual harvest of just over 5 million cubic meters of wood. The Port McNeill Forest District has six Tree Farm Licenses (TFL) and one Timber Supply Area (TSA). For resource planning purposes the district was divided into logical management units following the boundaries of Tree Farm Licenses and the Kingcome Timber Supply Area.

[1] Ministry of Forests Act, Section 4, 1979

Management Unit & AAC Summary Port McNeill Forest District

Management Unit Tenure	Licensee	AAC
TSA - Kingcome	Various Licensees	1 488 885
TFL 37	Canadian Forest Products Ltd.	1 068 000
TFL 45	International Forest Products Limited	130 000
TFL 39	Weyerhaeuser	415 000
TFL 47	TFL Forest Ltd.	230 000
TFL 6	Western Forest Products Limited	1 490 000
Total	Includes smaller tenures & woodlots	5 121 706

1.1 Summary of PMFD (TSA/TFL) Backlog and Enhanced Forestry Issues

An overview of Resource Management Issues for the PMFD (a Type I Analysis) is provided on the Ministry of Forests website at the following address:

(http://wwwinternal.for.gov.bc.ca/ftp/branches/corporate_policy_&_planning/external/!publish/resource_management_planning/rmp_2000_2001/mof_-_melp_rmps/vancouver/2 -sh/mof - sh/sh appendices - mof/a17 tsa plans/kingcome pm/xx port mcneill 00 silv strategy.doc

This document, Incremental Silviculture Strategies-A Component of the PMFD 2000 Resource Management Plan (Sep. 1999), was prepared by L.P. Atherton and Associates based on the district working session held July 29 & 30, 1998 in Port McNeill. It forms the basis for the PMFD resource management silviculture strategies, and the rationale for the regime priorities.

Submissions from the five key participants (TFL 6-WFP, TFL 37-CFP, TFL 39-Weyerhaeuser, TFL 45-IFP, and TFL 47-TFL Forest) and Ministry of Forests evaluations of those submissions are located in separate appendices (one for each TFL) as identified in the table of contents. Overall, the planning and silviculture strategies are consistent with the management unit priorities and the Kingcome TSA rankings, albeit with some variation between licensees. The variation in strategies is to be expected considering the very diverse landbase in the Kingcome TSA and five different corporate visions for forest management. The Port McNeill District of the Minstry of Forests generally concurs with the priorities and rankings proposed by the Licensees. The proposals are in line with the TFL Management Plans and Incremental Silviculture Strategies or Type I/II Analyses. Furthermore, the overall submission ratings (located in the evaluation forms within each TFL appendix) varied only from moderate (2) to high (3), which indicates a strong commitment to the RMP process. The collective RMP sets forth a strategy to ensure the land base not only is all growing productively, but also is improved in terms of wood and habitat quantity and quality through incremental silviculture and habitat restoration activities.

1.2 PMFD Sustainable Harvest (SH) Data roll up (combined TFL/TSA activities)

The combined TFL/TSA activity tables are located in **Appendix I.**

2.0 Port McNeill Forest District's RMP-TSA Portion:

2.1 TSA Silviculture Strategy Summary

An incremental silviculture strategy was developed for the Kingcome TSA using the Ministry of Forests, "Guidelines for the Development of Resource Management Plans for 2002 – 2003". All TFL Licensees also followed this guidance.

The Incremental Silviculture Strategies for all Management Units are summarized to show all goals and funding required for each activity by program for the five year planning period as seen in the summary tables in Appendix 1. Despite the various priority ranking within each management unit, the Port McNeill Forest District continues to rank activities for the planning unit in the following order of overall priority:

Rank#
1. Cage Maintenance (rolled into planting on Backlog Program Table)
2. Conifer Release/Brushing
3. Backlog NSR
4. Fertilization
5. Expanding the Timber Harvesting Landbase
6. Juvenile Spacing
7. Pruning

Choosing to fund activities in this order will have the greatest timber supply benefits overall for the planning unit.

New Strategy for consideration: "Site Rehabilitation"
Site rehabilitation: the conversion of the existing unsatisfactory cover on highly productive forest sites to a cover of commercially valuable species. (Glossary of forestry terms, MOF website).

There are a number of sites on the Kingcome TSA that technically meet minimum stocking requirements (or >60% of minimum stocking, qualifying them as satisfactorily restocked (SR) based on the MoF backlog NSR policy), that would fall into the category of site rehabilitation (or site restoration). In particular, off-site Douglas fir plantations on Malcolm Island, and heavily weeviled Sitka spruce plantations on the floodplains of the 5 key mainland drainages (Klinaklini R., Kakweiken R., Kingcome R., Wakeman R., Seymour R.) present opportunities for this type of work. It is unlikely that any of this work would proceed on these areas until at least fiscal year 2003/2004. The relative priority of this activity would depend on site specific factors, management objectives, and the results of surveys and cost/benefit analyses. Twenty hectares per year has been forecast at this time, starting in 2003/04.

STRATEGY AT A GLANCE

Working Targets	The Kingcome TSA has limited ability to overcome forecast reductions in both timber quantity and quality. **Quantity**: Maintain short term harvests at near-current levels (TSR 1 AAC of approx. 1.5 million m3/yr) for as long as possible. Manage mid-term timber supplies to yield a harvest of approximately 1.0 million m3/yr and long term supplies to yield 1.3 million m3/yr. **Quality**: Manage regenerated stands to yield at least 4% premium logs by volume, with the majority of the remainder being of sawlog quality.
Product Objectives	The following are product objectives at the log level for the Kingcome TSA. **Premium Log**: Hemlock .... 60+ cm DBH, clear, min 5 m log, not less than 3-4 rings/cm on M/P sites and 2-3 rings/cm on G sites. Cedar pole...... 45+ cm min DBH, min 20 m log, low taper, min 20 cm top. Balsam .... 60+ cm DBH, clear, min 5 m log. **Sawlog**: Minimum average stand DBH of 45 cm and min. stand vol. of 350 m3/ha.
Major Silvicultural Strategies	**Quantity** (Some of the following are not within the traditional scope of incremental silviculture but are included here for completeness.) 1. Increase regenerated stand yields 20%, and achieve green-up 3 years earlier by: • reducing time to regeneration by 2 years by planting all areas; • using (2nd gen) A class seed or better (requires tree improvement for Balsam); • using large planting stock, and/or individual tree fertilizing at planting, and/or seedling protection; • brushing for growth enhancement; and • fertilizing 200-700 ha/yr of cedar-salal sites to achieve early crown closure. 2. Implement partial harvesting regimes in VQ zones. 3. Expand the timber harvesting land base by: • Reforesting or reclassifying the remaining backlog NSR (less than 100 ha) • brushing (for conifer release) the remaining backlog of harvested sites with significant deciduous competition, subject to district alder management strategy (currently under development). Amount will vary from 250-650 ha/yr • draining low-site wet lands (10 ha trial) • assessing opportunities for rehabilitating non-commercial alder stands back into conifer production. • assessing opportunities for site restoration on weevil infested sitka spruce plantations, off-site Douglas fir plantations, and other problem sites. Growth and Yield reductions may apply. **Quality** 1. Pruning: One-lift prune (3.5 m) or two-lift prune (5.0 m) 50 ha/year of spaced stands over the next 5 years. 2. Manage selected stands to higher densities to yield pole-sized trees. 3. Juvenile Space 100 ha/yr to increase avg. piece sizes, prepare stands for pruning and commercial thinning, and to reduce rotation ages.

2.2 Kingcome TSA Portion Enhanced and Backlog Issues

The following is a brief explanation as to the specifics on where the PMFD anticipate 2002/2003 funding within the TSA to be focused, including Western Forest Products' FL A19240:

2.2.1 Enhanced Program:

Surveys	**1500 ha** – Required to obtain accurate data, field layout and SMPs for all incremental activities listed below. 500 ha is FL A19240 (WFP)
Spacing	**100 ha**: Suitable areas exist west of William Lake (FLA19240, blocks 137 & 138,+/- 100 ha) and on Malcolm Island (block 65-33, +/-50 ha), for example.
Pruning	**60 ha**: In the last few years very little spacing has been funded on the TSA. Consequently, future pruning will follow future spacing, as previously spaced stands have now fallen outside of the ideal treatable time frame. This 60 ha is located on FLA19240.
Fertilizing	**200 ha**: This level (on FLA19240) will increase as backlog brushing is eliminated in the future. Candidate sites include approx. 350 ha around the Nahwitti Lake area, and 150 ha of remaining ground in the Dick Booth drainage not treated in March of 1998. Gilford Island, Broughton Island, and Viola Lake area also have many candidate stands. Fertilizing every other year is to combine/coordinate with 200 ha on WFP's FL A19240, to reduce costs and increase efficiency.
Forest Health	The forest health monitoring program includes assisting Vancouver Region in disseminating and collecting gypsy moth pheromone traps across the PMFD. In addition, forest health overview flights are done periodically. Regular flights around the district are used to identify and monitor problems such as the 1998/99 western black headed budworm defoiliation on hemlock (now in remission) and white pine weevil on sitka spruce. Mountain Pine beetle is a problem on the Chilcotin Plateau and a regular monitoring program must be maintained in the Klinaklini River area to monitor spread into our district (this area was monitored in Sep. 2000 by the PMFD, but this will be handled in future by a provincial task force).

2.2.2 Backlog Program

Surveys – Backlog Reforestation	**610 ha** – planting performance/cage maintenance and regen delay surveys • High priority is on Malcolm Island. Areas need to be surveyed in 2001 and treatments prescribed for

2002/2003.

- 160 ha on Backlog SP areas (legal obligation)
- About 20 ha of vole damage on recent plantations require assessment and possible fill planting.
- 200 ha of follow up regen surveys to monitor the success of planting NSR areas on Malcolm Island over the past 3 years.
- 150 ha of cage maintenance or removal surveys
- In Knight Inlet, of 6 possibly NSR openings (242 ha) surveyed last year, 155 ha were identified as meeting the minimum NSR definition (avg. 400 wss/ha), and can be classified as impeded. There is a potential to conduct site restoration/conversion on this 155 ha (fill-planting and girdling/removal of severely weeviled Ss). The remainder of the area was either FG or NP (wet).
- 100 ha-Surveys on Gilford Island (30 ha), as well about 70 ha in Wakeman, Seymour and Magson Rivers are required to clarify identified potential NSR problems.

Site Prep

35 ha – Western Forest Products site prepared 65ha of NSR ground, and planted, caged and fertilized a total of 109 ha in 2001/2. It is anticipated they will tackle most of the remaining areas in 2002/3. These will be prescribed for treatment within backlog SPs (legal obligations)

Planting/ caging

170 ha – Malcolm Island: 35ha of site prep/plant/cage/fert., 5 ha of plant/fill-plant only, 30 ha of cage installation and fertilization only, and 100 ha of critical cage maintenance or removal (assumes 33% of areas surveyed will require attention). It should be noted that cage removal is anticipated on average to cost $1200/ha; to delay this treatment could result in the plantations failing and having to restart at an expense of $3500/ha, or lose the long term contribution to AAC

Surveys – Impeded Areas

3000 ha –

- 1500 ha-Located in various older cutblocks scattered on the mainland portion of the district. Mount Connolly, Wakeman, lower Kingcome, and Seymour areas are the main concentrations. From survey work it is anticipated that stratification will net the treatable area down to 200-500 ha/year, until appraisal areas previously declared FG begin to develop serious alder encroachment (not expected until at least 2005).
- 1000 ha- Within the floodplains of the other 4 key mainland drainages (Seymour, Wakeman, Kakweiken, Kingcome) there are other 1970-80's spruce plantations that are

affected by the white pine weevil. Further heli/ground surveys are necessary to define the problem and develop an appropriate strategy. These surveys may identify further NSR/NP areas

- 500 ha-The remaining 500ha are planned for heli flights (at approximately $10/ha) on pre 1987 logging to identify future projects, update stocking status and confirm efficacy of previous brush treatments.

Brushing Impeded Areas **650 ha**

500 ha – This is the MoF-IFP target alder girdling program for 2002/3. It is expected to focus on Mount Connolly, Jennis Bay, Gilford Island, Wakeman Inlet, Kingcome Inlet, and upper Seymour River. Future alder treatment areas are estimates at this time, but will be clarified during planned surveys.
150 ha- Based on WFP's submitted plan for FL A 19240, this is alder control required in the Holberg area.

2.3 Kingcome TSA Treatment Regime Ranking Table

Table 2.3 Silviculture Regimes and Investment Priorities

The following table indicates silviculture regime levels suitable for attaining the above working strategies.

Priority	Silviculture Regime	Silv. Strategy Code	Opportunity	Timber Supply Effects			Quality Effects	Habitat Effects	Direct Silv. Jobs	Direct Cost
		(see table 1.3.14).	Ha/yr	Short term	Medium term	Long term			Days/ha	$/ha
	Backlog									
1	Site prep & planting/caging*	ST2a, ST5, MT6, LT2	100	+	+	+	0	0	4	2400
2	Conifer release/brushing	ST2c, MT3f**, LT1	200-500	+	+	+	0	0	1	1000
	Fertilisation									
3	Cw age 10-40 M, P sites	ST2d & 4, MT3e,5ab, LT1	500	+	+	+	+	+	0.2	550
	Expand THLB									
4	Improve Drainage	ST5b, MT6, LT2	(10)	0	+	+	0	-	1	3000
5	Site rehabilitation	ST5c, MT6, LT2	Assess (100)	0	+	+	+	-	2	3000
	Spacing									
6	HB M-G 6-8m (<10m, >5000)	MT2b, Q3 (set up for CT)	100	0	+	0	+	+/0	5	1650
	Pruning (2/3 of spaced stands)									
7	3.5 m 1st lift	Q1	50	0	0/-**	0/-	+	+	5	1800
8	5m 2nd lift	Q1	50	0	0/-	0/-	+	+	6	2200

Note: Backlog planting should be completed by Spring 2004, and cage maintenance will be ongoing until about 2008

*MT3(f)=new Medium term effect code added for conifer release/brushing. Pruning >40 % of live crown may have negative effects on volume

2.4 Kingcome TSA Sustainable Harvest Data Template

See Appendix II for the TSA Sustainable Harvest Data Template, including:

1. Port McNeill Forest District (Kingcome TSA) Enhanced Forestry Table For the 2002/03 Fiscal Year
2. Port McNeill Forest District (Kingcome TSA) Backlog Program Table For the 2002/03 Fiscal Year
3. Port McNeill Forest District (Kingcome TSA) Performance Measures Based on Activities Planned for 2002/2003 Based on Type 1 silviculture strategy
4. Port McNeill Forest District (Kingcome TSA) Management Unit Summary Table For the 2002/03 Fiscal Year

2.5 Kingcome TSA Communication Log

See **Appendix II** for the Communication Log, which documents communications between the PMFD RMP co-ordinator and other offices.

2.6 Kingcome TSA Plan Comparison Table

See **Appendix II** for the TSA Plan Comparison Table, which compares last year's plan with this years plan for the upcoming year.

2.7 Proposed TSA Studies Form

There are no proposed studies in this years' RMP for the Kingcome TSA portion of the plan.

2.8 TFL Submission Evaluations

Refer to the applicable TFL Appendix (III-VII) for TFL Licensee SH RMP submission evaluations.

3.0 Port McNeill Forest District's TFL Portion (Key Participants):

Refer to the applicable **Appendix (III-VII)** for each of the five TFL submissions. The contents of the Appendices are indicated in the table of contents and on the header page for each appendix.

Appendix 1

Kingcome TSA and TFL Summary Tables

- PMFD Total Enhanced Forestry Summary Table
- PMFD Total Backlog Summary Table
- Total TSA Enhanced Forestry
- Total TSA Backlog
- Total TFL Enhanced Forestry
- Total TFL Backlog
- TFL 37 Enhanced Forestry
- TFL 45 Enhanced Forestry
- TFL 6 Enhanced Forestry
- TFL 39 Enhanced Forestry
- TFL 47 Enhanced Forestry
- TFL 37 Backlog
- TFL 45 Backlog
- TFL 47 Backlog
- TFL 6 Backlog
- TFL 39 Backlog

Table 1.0.0: Port McNeill Forest Districts Total (TSA + TFL)
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Stand Tending								
Surveys	4945	4070	4795	4095	4895	34.37	169955	
Spacing	565	505	570	520	520	2123.89	1200000	
Pruning	450	405	535	400	450	2693.77	1212200	
Fertilizing	3350	3050	4300	3050	4400	421.64	1412500	
Other	103	103	103	103	103	1512.14	155000	
Totals hectares	9413	8133	10303	8168	10368	440.87	4,149,655	
Planning and prescriptions							143600	
Total dollars							4,293,255	
Forest Health Enhancement								
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	120	65	45	40	30	2,633.29	316000	
Non-riparian treatments	20	25	35	30	30	2,999.25	60000	
Totals hectares	140	90	80	70	60	2,685.58	376,000	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	4945	4070	4795	4095	4895	34.37	169,955	
Spacing	565	505	570	520	520	2,123.88	1,200,000	
Pruning	450	405	535	400	450	2,693.74	1,212,200	
Fertilizing	3350	3,050	4,300	3,050	4,400	421.64	1,412,500	
Other stand tending activities	243	193	183	173	163	2,189.50	531000	
Totals hectares	9553	8030	10200	8065	10265	473.76	4,525,655	
Planning and prescriptions							143,600	
Studies funding							32000	
Total dollars							4,701,255	

Table 2.0.0: Port McNeill Forest Districts Total (TSA + TFL)
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	173	50	50	50	50		6540	
Site preparation	35	20	0	0	0	1,649.76	57750	
Planting	150	45	45	45	45	1,524.95	228750	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	358	115	95	95	95	818.49	293,040	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							293,040	
Backlog Reforestation								
Surveys	2270	970	570	420	420	25.00	84450	
Site preparation	0	0	0	0	0	0.00	0	
Planting	25	10	5	5	5	1,178.61	29475	
Brushing	0	20	0	20	0	0.00	0	
Totals hectares	2295	1000	575	445	425	49.64	113,925	
Seed purchase	40	0	0	0	0	149.98	6000	
Prescriptions and planning dollars							33000	
Total backlog reforestation							152,925	
Impeded areas								
Surveys	4235	3115	1965	2750	1600	25.00	87950	
Brushing	1275	1105	755	495	495	600.00	1135550	
Density spacing	30	0	0	0	0	2,499.58	75000	
Totals hectares	5540	4220	2720	3245	2095	234.39	1,298,500	
Prescriptions and planning dollars							63100	
Total impeded areas							1,361,600	
Site Restoration								
Fill planting	0	20	20	20	20	0.00	0	
Rehabilitation	0	0	0	0	0	1,500.00	0	
Reforestation	5	5	5	5	5	600.00	6600	
Totals hectares	5	25	25	25	25	1,315.53	6,600	
Seed purchase	5000	5020	5020	5020	5020	0.02	3350	
Prescriptions and planning dollars							1800	
Total site restoration							11,750	
Backlog Program Activities - Management Unit Total								
Surveys	6678	4135	2585	3220	2070	26.80	178940	
Site preparation	35	20	0	0	0	1,649.25	57750	
Planting	180	80	75	75	75	1,471.09	264825	
Brushing	1275	1125	755	515	495	890.62	1135550	
Density spacing	30	0	0	0	0	2,499.08	75000	
Totals hectares	8198	5360	3415	3810	2640	208.84	1712065	
Seed purchase	5040	5020	5020	5020	5020	1.86	9350	
Prescriptions and planning							97,900	
Recommended studies							0	
Total backlog program							1,819,315	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Port McNeill Forest District (Kingcome TSA)
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities

Stand Tending

	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1500	1000	1000	1000	1000	40.00	60000	1
Spacing	100	100	100	100	100	1650.00	165000	2
Pruning	60	15	75	30	30	2000.00	120000	3
Fertilizing	200	0	700	0	700	600.00	120000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	1860	1115	1875	1130	1830	250.00	465,000	
Planning and prescriptions							43,000	1
Total dollars							508,000	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	1500	1000	1000	1000	1000	40.00	60,000	
Spacing	100	100	100	100	100	1,650.00	165,000	
Pruning	60	15	75	30	30	2,000.00	120,000	
Fertilizing	200	0	700	0	700	600.00	120,000	
Other stand tending activities	0	0	0	0	0	0.00	0	
Totals hectares	1860	1115	1875	1130	1830	250.00	465,000	
Planning and prescriptions							43,000	
Studies funding							0	
Total dollars							508,000	

Port McNeill Forest District (Kingcome TSA)
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	160	50	50	50	50	33.00	5280	1
Site preparation	35	20	0	0	0	1,650.00	57750	1
Planting + cage maint.	150	45	45	45	45	1,525.00	228750	1
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	345	115	95	95	95	845.73	291,780	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							291,780	
Backlog Reforestation								
Surveys	450	200	200	200	200	33.00	14850	1
Site preparation	0	0	0	0	0	0.00	0	
Plant/cage & cage maint.	20	5	5	5	5	1,143.75	22875	1
Brushing	0	20	0	20	0	0.00	0	
Totals hectares	470	225	205	225	205	80.27	37,725	
Seed purchase (ha)	40	0	0	0	0	150.00	6,000	1
Prescriptions and planning dollars							30,000	1
Total backlog reforestation							73,725	
Impeded areas								
Surveys	3000	2000	1000	2000	1000	16.67	50000	1
Brushing	650	500	400	250	300	1,000.00	650000	2
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	3650	2500	1400	2250	1300	191.78	700,000	
Prescriptions and planning dollars							35,000	1
Total impeded areas							735,000	
Site Restoration								
Fill planting	0	20	20	20	20	0.00	0	
Rehabilitation	0					0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	20	20	20	20	0.00	0	
Seed purchase (ha)	0	20	20	20	20	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	3810	2250	1250	2250	1250	19.43	70130	H
Site preparation	35	20	0	0	0	1,649.91	57750	H
Planting	170	70	70	70	70	1,480.13	251625	H
Brushing	650	520	400	270	300	1,000.00	650000	M
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	4465	2860	1720	2590	1620	230.57	1029505	
Seed purchase (ha)	40	20	20	20	20	149.99	6000	
Prescriptions and planning							65,000	
Recommended studies							0	
Total backlog program							1,100,505	

* Seed purchase includes seedlings purchase. Units are hectares.

Table 2.2.0: Port McNeill Forest Districts (Total TFL)
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	13	0	0	0	0	96.90	1260	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	13	0	0	0	0	96.75	1,260	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							1,260	
Backlog Reforestation								
Surveys	1820	770	370	220	220	38.24	69600	
Site preparation	0	0	0	0	0	0.00	0	
Planting	5	5	0	0	0	1,318.94	6600	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	1825	775	370	220	220	41.75	76,200	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							3000	
Total backlog reforestation							79,200	
Impeded areas								
Surveys	1235	1115	965	750	600	30.73	37950	
Brushing	625	605	355	245	195	776.88	485550	
Density spacing	30	0	0	0	0	2,499.67	75000	
Totals hectares	1890	1720	1320	995	795	316.67	598,500	
Prescriptions and planning dollars							28100	
Total impeded areas							626,600	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	5	5	5	5	5	1,318.94	6600	
Totals hectares	5	5	5	5	5	1,316.31	6,600	
Seed purchase	5000	5000	5000	5000	5000	0.67	3350	
Prescriptions and planning dollars							1800	
Total site restoration							11,750	
Backlog Program Activities - Management Unit Total								
Surveys	3068	1885	1335	970	820	35.47	108810	
Site preparation	0	0	0	0	0	0.00	0	
Planting	10	10	5	5	5	1,317.63	13200	
Brushing	625	605	355	245	195	776.87	485550	
Density spacing	30	0	0	0	0	2,499.25	75000	
Totals hectares	3733	2500	1695	1220	1020	182.84	682560	
Seed purchase	5000	5000	5000	5000	5000	0.67	3350	
Prescriptions and planning							32,900	
Recommended studies							0	
Total backlog program							718,810	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Table 1.2.0: Port McNeill Forest Districts (Total TFL)
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	3445	3070	3795	3095	3895	31.92	109955	
Spacing	465	405	470	420	420	2225.81	1035000	
Pruning	390	390	460	370	420	2800.51	1092200	
Fertilizing	3150	3050	3600	3050	3700	410.32	1292500	
Other	103	103	103	103	103	1512.15	155000	
Totals hectares	7553	7018	8428	7038	8538	487.87	3,684,655	
Planning and prescriptions							100,600	
Total dollars							3,785,255	
Forest Health Enhancement								
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	120	65	45	40	30	2,633.31	316000	
Non-riparian treatments	20	25	35	30	30	2,999.40	60000	
Totals hectares	140	90	80	70	60	2,685.62	376,000	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	3445	3070	3795	3095	3895	31.92	109,955	
Spacing	465	405	470	420	420	2,225.78	1,035,000	
Pruning	390	390	460	370	420	2,800.47	1,092,200	
Fertilizing	3150	3,050	3,600	3,050	3,700	410.32	1,292,500	
Other stand tending activities	243	193	183	173	163	2,189.54	531000	
Totals hectares	7693	6915	8325	6935	8435	527.87	4,060,655	
Planning and prescriptions							100,600	
Studies funding							32000	
Total dollars							4,193,255	

TFL 37 - Canadian Forest Products Ltd.
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities

Stand Tending

	Treatment Area Goals (ha)					Plan 2002/03			
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority	
Surveys	60	60	60	60	60	133.33	8000	1	PSTs, SMPs, layout etc
Spacing	60	60	60	60	60	1800.00	108000	2	Community Forestry
Pruning	60	60	60	60	60	1800.00	108000	2	Community Forestry and First Nations
Fertilizing	1400	1400	1400	1400	1400	296.43	415000	1	
Other	0	0	0	0	0	0.00	0		
Totals hectares	1580	1580	1580	1580	1580	404.43	639,000		700000
Planning and prescriptions							0		
Total dollars							639,000		61,000

Forest Health Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Riparian treatments	35	0	0	0	0	1,742.86	61000	1
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	35	0	0	0	0	1,742.81	61,000	

Domestic Range

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	60	60	60	60	60	133.33	8,000	
Spacing	60	60	60	60	60	1,799.97	108,000	
Pruning	60	60	60	60	60	1,799.97	108,000	
Fertilizing	1400	1,400	1,400	1,400	1,400	296.43	415,000	
Other stand tending activities	35	0	0	0	0	1,742.66	61000	
Totals hectares	1615	1580	1580	1580	1580	433.43	700,000	
Planning and prescriptions							0	
Studies funding							0	
Total dollars							700,000	

TFL 45 Port McNeill
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities

Stand Tending

	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	600	600	600	600	600	25.00	15000	2
Spacing	50	0	50	0	0	2500.00	125000	1
Pruning		0	50	0	50	#DIV/0!	0	
Fertilizing	500	500	500	500	500	300.00	150000	2
Other	0	0	0	0	0	0.00	0	
Totals hectares	1150	1100	1200	1100	1150	252.17	290,000	
Planning and prescriptions							15,000	1
Total dollars							305,000	

Forest Health Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	#DIV/0!	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Domestic Range

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	600	600	600	600	600	25.00	15,000	
Spacing	50	0	50	0	0	2,499.95	125,000	
Pruning	0	0	50	0	50	0.00	0	
Fertilizing	500	500	500	500	500	300.00	150,000	
Other stand tending activities	0	0	0	0	0	0.00	0	
Totals hectares	1150	1100	1200	1100	1150	252.17	290,000	
Planning and prescriptions							15,000	
Studies funding							10000	1
Total dollars							315,000	

TFL 6 - Western Forest Products Limited
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities

Stand Tending	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1650	1275	2000	1300	2100	30.00	49500	1
Spacing	220	220	235	235	235	2500.00	550000	2
Pruning	320	320	340	300	300	3000.00	960000	2
Fertilizing	850	750	1300	750	1400	600.00	510000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	3040	2565	3875	2585	4035	680.76	2,069,500	
Planning and prescriptions							45,600	1
Total dollars							2,115,100	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	50	50	40	40	30	3,000.00	150000	1
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	50	50	40	40	30	2,999.94	150,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	1650	1275	2000	1300	2100	30.00	49,500	
Spacing	220	220	235	235	235	2,499.99	550,000	
Pruning	320	320	340	300	300	2,999.99	960,000	
Fertilizing	850	750	1,300	750	1,400	600.00	510,000	
Other stand tending activities	50	50	40	40	30	2,999.76	150000	
Totals hectares	3090	2565	3875	2585	4035	718.28	2,219,500	
Planning and prescriptions							45,600	
Studies funding							0	
Total dollars							2,265,100	

TFL39 - Port McNeill District Blocks 3&4
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1000	1000	1000	1000	1000	33.00	33000	1
Spacing	50	50	50	50	50	1980.00	99000	2
Pruning	10	10	10	10	10	2420.00	24200	3
Fertilizing	350	350	350	350	350	550.00	192500	1
Other	15	15	15	15	15	5333.33	80,000	1
Totals hectares	1425	1425	1425	1425	1425	300.84	428,700	
Planning and prescriptions							20,000	1
Total dollars							448,700	
Forest Health Enhancement								
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	30	10	0	0	0	3,000.00	90000	1
Non-riparian treatments	0	20	30	30	30	0.00	0	
Totals hectares	30	30	30	30	30	2,999.90	90,000	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	1000	1000	1000	1000	1000	33.00	33,000	
Spacing	50	50	50	50	50	1,979.96	99,000	
Pruning	10	10	10	10	10	2,419.76	24,200	
Fertilizing	350	350	350	350	350	550.00	192,500	
Other stand tending activities	45	45	45	45	45	3,777.53	170000	
Totals hectares	1455	1410	1410	1410	1410	356.49	518,700	
Planning and prescriptions							20,000	
Studies funding							0	
Total dollars							538,700	

Tree Farm Licence No. 47 - Portion in the Port McNeill Forest District
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	135	135	135	135	135	33.00	4455	1
Spacing	85	75	75	75	75	1800.00	153000	2
Pruning	0	0	0	0	0	0.00	0	
Fertilizing	50	50	50	50	50	500.00	25000	1
Other	88	88	88	88	88	857.14	75,000	2
Totals hectares	358	348	348	348	348	720.15	257,455	
Planning and prescriptions							20,000	1
Total dollars							277,455	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	5	5	5	0	0	3,000.00	15000	2
Non-riparian treatments	20	5	5	0	0	3,000.00	60000	2
Totals hectares	25	10	10	0	0	3,000.00	75,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	135	135	135	135	135	33.00	4,455	
Spacing	85	75	75	75	75	1,799.98	153,000	
Pruning	0	0	0	0	0	0.00	0	
Fertilizing	50	50	50	50	50	500.00	25,000	
Other stand tending activities	113	98	98	88	88	1,333.31	150000	
Totals hectares	383	260	260	260	260	869.15	332,455	
Planning and prescriptions							20,000	
Studies funding							22000	1
Total dollars							374,455	

TFL 37 - Canadian Forest Products Ltd.
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03			
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority	
Legal Obligations									
Surveys	0	0	0	0	0	#DIV/0!	0		
Site preparation	0	0	0	0	0	0.00	0		
Planting	0	0	0	0	0	0.00	0		
Brushing	0	0	0	0	0	0.00	0		
Max. density spacing	0	0	0	0	0	0.00	0		
Totals hectares	0	0	0	0	0	0.00	0		
Seed purchase	0	0	0	0	0	0.00	0		
Total legal obligations							0		
Backlog Reforestation									
Surveys	0	0	0	0	0	#DIV/0!	0		
Site preparation	0	0	0	0	0	0.00	0		
Planting	0	0	0	0	0	0.00	0		
Brushing	0	0	0	0	0	0.00	0		
Totals hectares	0	0	0	0	0	0.00	0		
Seed purchase	0	0	0	0	0	0.00	0		
Prescriptions and planning dollars							0		
Total backlog reforestation							0		
Impeded areas									
Surveys	300	300	300	300	300	28.00	8400	2	Free Growing surveys on pre Oct 1, 87 blocks.
Brushing	10	0	0	0	0	600.00	6000	1	Brushing treatments that are identified in FG surveys
Density spacing	0	0	0	0	0	0.00	0		
Totals hectares	310	300	300	300	300	46.45	14,400		
Prescriptions and planning dollars							0		
Total impeded areas							14,400		
Site Restoration									
Fill planting	0	0	0	0	0	0.00	0		
Rehabilitation	0	0	0	0	0	0.00	0		
Reforestation	0	0	0	0	0	0.00	0		
Totals hectares	0	0	0	0	0	0.00	0		
Seed purchase	0	0	0	0	0	0.00	0		
Prescriptions and planning dollars							0		
Total site restoration							0		
Backlog Program Activities - Management Unit Total									
Surveys	300	300	300	300	300	28.00	8400		
Site preparation	0	0	0	0	0	0.00	0		
Planting	0	0	0	0	0	0.00	0		
Brushing	10	0	0	0	0	599.88	6000		
Density spacing	0	0	0	0	0	0.00	0		
Totals hectares	310	300	300	300	300	46.45	14400		
Seed purchase	0	0	0	0	0	0.00	0		
Prescriptions and planning							0		
Recommended studies							0		
Total backlog program							14,400		

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

TFL 45 Port McNeill
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	
Impeded areas								
Surveys	150	100	50	50	0	40.00	6000	1
Brushing	150	200	50	50	0	1,300.00	195000	1
Density spacing	30	0	0	0	0	2,500.00	75000	1
Totals hectares	330	300	100	100	0	836.36	276,000	
Prescriptions and planning dollars							8,000	1
Total impeded areas							284,000	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	150	100	50	50	0	40.00	6000	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	150	200	50	50	0	1,299.98	195000	
Density spacing	30	0	0	0	0	2,499.92	75000	
Totals hectares	330	300	100	100	0	836.33	276000	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							8,000	
Recommended studies							0	
Total backlog program							284,000	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Tree Farm Licence No. 47 - Portion in the Port McNeill Forest District
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	5	5	5	5	5	1,320.00	6600	2
Totals hectares	5	5	5	5	5	1,319.47	6,600	
Seed purchase	5,000	5000	5000	5000	5000	0.67	3,350	2
Prescriptions and planning dollars							1,800	2
Total site restoration							11,750	
Backlog Program Activities - Management Unit Total								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	5	5	5	5	5	1,319.21	6600	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	5	5	5	5	5	1,316.31	6600	
Seed purchase	5000	5000	5000	5000	5000	0.67	3350	
Prescriptions and planning							1,800	
Recommended studies							0	
Total backlog program							11,750	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

TFL 6 - Western Forest Products Limited
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	320	270	270	120	120	30.00	9600	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	320	270	270	120	120	30.00	9,600	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							9,600	
Impeded areas								
Surveys	785	715	615	400	300	30.00	23550	1
Brushing	455	395	295	185	185	600.00	273000	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1240	1110	910	585	485	239.15	296,550	
Prescriptions and planning dollars							18,600	1
Total impeded areas							315,150	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	1105	985	685	520	420	30.00	33150	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	455	395	295	185	185	600.00	273000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1560	1380	1180	705	605	1[illegible].25	306150	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							18,600	
Recommended studies							0	
Total backlog program							324,750	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

TFL39 - Port McNeill District Blocks 3&4
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	13	0	0	0	0	96.92	1260	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	13	0	0	0	0	96.89	1,260	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							1,260	
Backlog Reforestation								
Surveys	1500	500	100	100	100	40.00	60000	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	5	5	0	0	0	1,320.00	6600	1
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	1505	505	100	100	100	44.25	66,600	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							3,000	1
Total backlog reforestation							69,600	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	10	10	10	10	10	1,155.00	11550	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	10	10	10	10	10	1,154.77	11,550	
Prescriptions and planning dollars							1,500	1
Total impeded areas							13,050	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	1513	500	100	100	100	40.49	61260	
Site preparation	0	0	0	0	0	0.00	0	
Planting	5	5	0	0	0	1,319.21	6600	
Brushing	10	10	10	10	10	1,154.77	11550	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1528	515	110	110	110	51.97	79410	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							4,500	
Recommended studies							0	
Total backlog program							83,910	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Appendix II

Kingcome TSA Sustainable Harvest Data Template

- TSA Enhanced Forestry Table
- TSA Backlog Table
- TSA Performance Measures Table
- TSA Management Unit Summary
- PMFD Communication Log
- Kingcome TSA Plan Comparison Table

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** Port McNeill Forest District (Kingcome TSA)

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

Port McNeill Forest District (Kingcome TSA)
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1500	1000	1000	1000	1000	40.00	60000	1
Spacing	100	100	100	100	100	1650.00	165000	2
Pruning	60	15	75	30	30	2000.00	120000	3
Fertilizing	200	0	700	0	700	600.00	120000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	1860	1115	1875	1130	1830	250.00	465,000	
Planning and prescriptions							43,000	1
Total dollars							508,000	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	1500	1000	1000	1000	1000	40.00	60,000	
Spacing	100	100	100	100	100	1,650.00	165,000	
Pruning	60	15	75	30	30	2,000.00	120,000	
Fertilizing	200	0	700	0	700	600.00	120,000	
Other stand tending activities	0	0	0	0	0	0.00	0	
Totals hectares	1860	1115	1875	1130	1830	250.00	465,000	
Planning and prescriptions							43,000	
Studies funding							0	
Total dollars							508,000	

Port McNeill Forest District (Kingcome TSA)
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	160	50	50	50	50	33.00	5280	1
Site preparation	35	20	0	0	0	1,650.00	57750	1
Planting + cage maint.	150	45	45	45	45	1,525.00	228750	1
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	345	115	95	95	95	845.73	291,780	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							291,780	
Backlog Reforestation								
Surveys	450	200	200	200	200	33.00	14850	1
Site preparation	0	0	0	0	0	0.00	0	
Plant/cage & cage maint.	20	5	5	5	5	1,143.75	22875	1
Brushing	0	20	0	20	0	0.00	0	
Totals hectares	470	225	205	225	205	80.27	37,725	
Seed purchase (ha)	40	0	0	0	0	150.00	6,000	1
Prescriptions and planning dollars							30,000	1
Total backlog reforestation							73,725	
Impeded areas								
Surveys	3000	2000	1000	2000	1000	16.67	50000	1
Brushing	650	500	400	250	300	1,000.00	650000	2
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	3650	2500	1400	2250	1300	191.78	700,000	
Prescriptions and planning dollars							35,000	1
Total impeded areas							735,000	
Site Restoration								
Fill planting	0	20	20	20	20	0.00	0	
Rehabilitation	0					0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	20	20	20	20	0.00	0	
Seed purchase (ha)	0	20	20	20	20	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	3610	2250	1250	2250	1250	19.43	70130	
Site preparation	35	20	0	0	0	1,649.91	57750	
Planting	170	70	70	70	70	1,480.13	251625	
Brushing	650	520	400	270	300	1,000.00	650000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	4465	2860	1720	2590	1620	230.57	1029505	
Seed purchase (ha)	40	20	20	20	20	149.99	6000	
Prescriptions and planning							65,000	
Recommended studies							0	
Total backlog program							1,100,505	

* Seed purchase includes seedlings purchase. Units are hectares.

1/4/2006

Port McNeill Forest District (Kingcome TSA)
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on Type 1 silviculture strategy

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.77	0	0	0	2.9	0.41	0.25	0	0.46	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	
Provincial factors for estimated value gain at harvest							5-15%	15-30%	1-5%	
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	1	4	1	5	5	0.2	0.1

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area Tree Improvement	Area Nursery Seedling Production	Area Silviculture Surveys
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	170		
Enter area of all other sites planted with improved trees	80		
Total area affected by tree improvement	250		
B Nursery production of seedlings			
Enter sowing requests from SPAR		120	
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			1,500
Total backlog surveys from the backlog table.			3,610
33% of all silviculture surveys			1,686
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			0
Estimate area of free growing surveys			4,000
Estimate area of pre-stand tending surveys			1,000
Estimate of total surveys that will affect timber supply			(A) 5,000
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			5,000
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			100
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			1,800

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity. 100

Port McNeill Forest District (Kingcome TSA)
Performance Measures Based on Activities Planned for 2002/2003
Based on Type 1 silviculture strategy

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	250	120	5,000	35	170	650	100	60	200	6,585	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	32,487	17,323	1,625	0	6,000		57,435
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			100								100
1.5	Est. area that will be declared as free growing (ha)			1,800								1,800
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	1	4	1	5	5	0.2	0.1	
3.2	Estimated total employment (person days/year)	25	41	500	35	680	650	500	300	40	659	
3.3	Estimated total full time equivalent positions (FTE)	0	0	3	0	4	4	3	2	0	4	19
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											0
5.3	Est. area with secondary value provided to biodiversity (ha)											100

Port McNeill Forest District (Kingcome TSA)
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	1,860	1,115	1,875	1,130	1,830	250	465,000
Planning, prescriptions and seedlings							43,000
Backlog Program Field Activities	4,465	2,860	1,720	2,590	1,620	231	1,029,505
Planning, prescriptions and seedlings							71,000
Totals	6,325	3,975	3,595	3,720	3,450		1,608,505

Performance Measures

Potential total merchentable volume increment in 65 years	57,435 m^3
Estimated ha that will be reclassified as stocked	100 ha
Estimated ha that will be declared as free growing	1,800 ha
Estimated total full time equivalent positions generated	19 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	0 ha
Estimated area with secondary value provided to biodiversity	100 ha

Agency: **Ministry of Forests**
TFL:
TSA: **Kincome**

Communication Log for the Sustainable Harvest Objective 2002-2003

(also include community/stakeholder meetings to review silviculture strategies and SH plans)

Date	Name (person contacted)	Representing	Communication Method	Comments/Issues
4/1/2005	Larry Sigurdson	MoF Van. Region	Telephone	Discussed overview of RMP process
10/1/2005	Al Barber	Canfor	Telephone	Confirmed CFP has no Sustainable Harvest plans on TSA
05/17/01	Dave Simpson	TimberWest	Telephone	Learned Dave hasn't received anything yet from Larry S.. Jack Turley is CR FL contact for RMP. No FL in PMFD, so letter not sent to TimberWest
05/17/01	Mike Deitsch	WFP	letter	Request for comments/input on Silviculture Regimes and Investment Priorities for 2002-3, by June 15/01
05/17/01	Nige Ross & Ian R.	Interfor	letter	as above
05/17/01	Mike Fidgeon	Weyerhaeuser	letter	as above
05/17/01	Jeff Ternan	Weyerhaeuser	letter	as above
05/17/01	Laslo Kardos	Interfor	letter	as above
05/23/01	Mike Fidgeon	Weyerhaeuser	email	Response to above letter. Pruning >50% crown may have negative volume impacts. Production figures questioned
05/28/01	Mike Deitsch	WFP	letter	received response to above letter. Mike had questions re level of fertilisation, brushing, and commented on production levels and costs
05/30/01	Mike Deitsch	WFP	telephone	Discussed Mike's comments and answered his questions

05/30/01	Mac Willing	MELP	email/telephone	Mac was unaware of interim habitat strategy and deadline. He will consult with his boss re who is responsible for doing it.
05/30/01	Nigel Ross	IFP	telephone	Discussed silv. Regimes with Nigel. He commented that nothing has changed much since previous years
05/31/01	Nigel Ross	IFP	email	Written response to letter. Questions re why not more site prep and planting, cost/benefit of lower priority BR vs higher priority #2 projects, and need for some site prep trials. Nigel requested a written response.
06/18/01	Larry Sigurdson	Region	telephone	Discussed RMP format and content issues
06/19/01	Mike DesRocher	WFP	telephone	Discussed costs for site prep/plant/cage fert. And surveys. Also learned that Mike is planning to do site prep on Malcolm in fall and planting prior to end of fiscal 200l.
06/20/01	Nigel Ross	IFP	telephone	Nigel called to ask how we are addressing the desire to eliminate backlog NSR by Mar. 2002. I said the Knight Inlet sites are technically SR, and fall more correctly under "site restoration". Primary treatment of Malcolm NSR sites will be done this year. I agree with Nigel that spending $ on our best sites should come ahead of alder girdling on cedar/salal, low sites. Future "site restoration" has been added to the RMP with Knight Inlet and other weeviled spruce/offsite fir sites in mind.
06/22/01	Mike Fidgeon	Weyerhaeuser	in person	Discussed RMP issues, funding levels, and confusion of categories on activity tables (eg brushing on backlog vs impeded sites, alder vs shrubs, NSR vs SR, backlog SP vs none)

06/22/01	Brian Voth	WFP	email	Sent draft evaluation of submission and requested further information be sent in, as well as electronic text.
06/25/01	Brian Voth	WFP	telephone	Brian unable to access Mike's computer (password). He will work on it this week and reply
06/25/01	Al Barber	CFP	telephone	Spoke to Bev. Left message that RMP is due on June 27 to PMFD
06/25/01	Roger Tailleur	TFL	telephone	Roger will contact Dave Elstone of EBA consultants to ensure RMP deadline of June 27 will be met.
06/25/01	Jeff Ternan	Weyerhaeuser	telephone	left message to return call re RMP deadline
06/26/01	Nigel Ross	IFP	email/telephone	Discussed TFL 45 submission, received today. Advised Nigel I would forward my evaluation to him
06/26/01	Brian Voth	WFP	telephone	Brian will try to send text portion on Thursday (only received executive summary)
06/27/01	Nigel Ross	IFP	email	Nigel commented that we should have a more formal decision tool for deciduous management
06/27/01	Al Barber	CFP	emai/telephone	Received activity tables from Al. Discussed them and Al will consider adding allowance for fertilization planning/prescriptions (1400 ha-mainly a GIS/mapping exercise). He won't send the text portion as it hasn't changed, and is based on TSR and MP#8. He is not proposing anything new or contentious.
07/09/01	Al Barber	CFP	email/telephone	sent Al the draft evaluation form and some specific questions. He would like to reuse last years text which is baxed on MP #8 and the TFL Timber Supply analysis. He will do the plan comparison, but had no communications to log.
07/10/01	Larry Sigurdson	region	telephone	Confirmed summary table roll up is for BL and EF tables only. Discussed need for link to Type 1 or 2 document in RMP. Will try to submit by July 16th, but still waiting for WFP plan comparison and text.
07/10/01	Al Barber	CFP	email received	Al sent me CFP's incremental Silviculture Plan and revised tables

07/10/01	Brian Voth	WFP	telephone	Brian just contacted Milke Deitsch yesterday. He was under impression that Type 1 Analysis was completed so only summary need be submitted. This is OK as long as there is some text to link it in the RMP. Brian will try to submit the plan comparison sheet ASAP.

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): Port McNeill Forest District (Kingcome TSA)

Stand Tending	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	840	1500	78.6	1	1	33	40	21.2	1000 ha on TSA due to backlog (fewer surveys done last year). Also includes 500 ha on WFP FL A19240
Spacing	120	100	-16.7	2	2	1980	1650	-16.7	Entire 100 ha on WFP FL A19240
Pruning	20	60	200.0	3	3	2420	2000	-17.4	Entire 60 ha on WFP FL A19240. Lots of second lift ready.
Fertilizing	600	200	-66.7	1	1	330	600	81.8	All on WFP FL A19240. Will coordinate a larger program with WFP in 2004/5 and 2006/07

Forest Health	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)
Spacing	0	0	#DIV/0!	0	0	1980	n/a	#VALUE!	
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Habitat Supply/ Biodiversity									
Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	
Non-Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): Kingcome TSA

	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Legal Obligation									
Surveys	0	160	#DIV/0!	0	1	33	33	0.0	Backlog SP requirements on Malcolm now shown separately under "legal obligations"
Site preparation	0	35	#DIV/0!	0	1	1650	1650	0.0	as above
Planting	0	150	#DIV/0!	0	1	1320	1525	15.5	as above
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
B/L Reforestation									
Surveys	1515	450	-70.2970297	1	1	33	33	0.0	Many surveys reclassified and moved to "impeded" or "legal obligation"
Site Prep	50	0	-100	1	0	1650	n/a	#VALUE!	site prep moved to "legal obligations" (backlog SP)
Planting	195	20	-89.7435897	1	1	1320	1143.75	-13.4	most planting moved to "legal obligations" (backlog SP exists or anticipated)
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	

	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Impeded									
Surveys	750	3000	300	1	1	33	16.67	-49.5	Analysis of ISIS identified larger need to calrify block status and identify alder issues and other problems. Forward planning is contingent on these surveys being done in a timely fashion.
brushing	600	650	8.33333333	1	2	1155	1000	-13.4	
Site Resoration									
Fill planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Rehab	0	0	#DIV/0!	0	0	2200	n/a	#VALUE!	
Reforestation	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	

Appendix III

Canadian Forest Products Ltd RMP Submission

- **CFP Incremental Silviculture Strategy 2001**

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- **Sustainable Harvest Data Template Tables**
- **Enhanced Forestry Table**
- **Backlog Table**
- **Performance Measures Table**
- **Management Unit Summary**

- **SH Plan Comparison Table**
- **Licensee Submission Evaluation Form**
-

Canadian Forest Products Ltd.

TFL 37

Incremental Silviculture Strategy

Prepared as a Component of the 2002 – 2006 Resource Management Plan

Prepared by

Canadian Forest Products Ltd.
Englewood Logging Division

For

Ministry of Forests
Port McNeill Forest District
Vancouver Forest Region

Revised: January 4, 2006

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1.0 Basic Data

Following is the basic data as outlined in TFL 37 Management Plan 8 approved by the Ministry of Forests.

Land Area

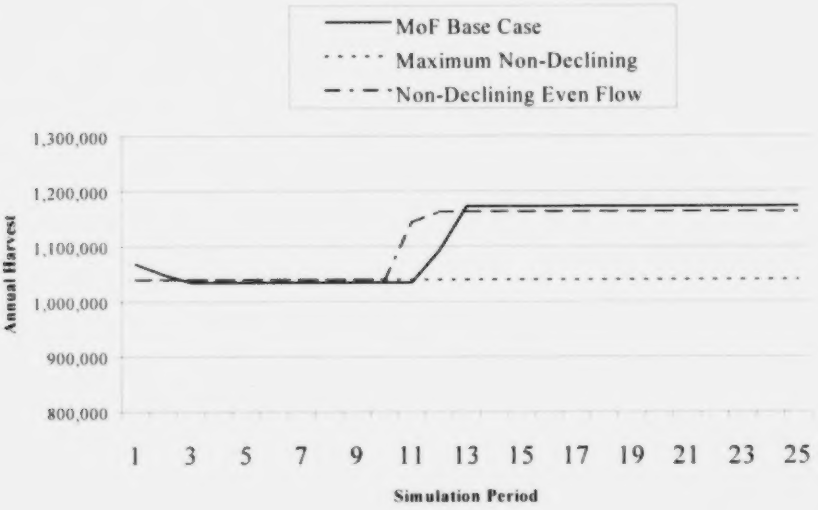
TFL 37 covers approximately 188,745 hectares on Northern Vancouver Island, of which 54% are considered within the net operable landbase for the long term. Schedule A lands within TFL 37 amount to 25,642 hectares (14%), including 4,725 hectares (2.5%) of private land and 20,917 hectares (11%) of private timber in Timber Licences (TLs).

AAC

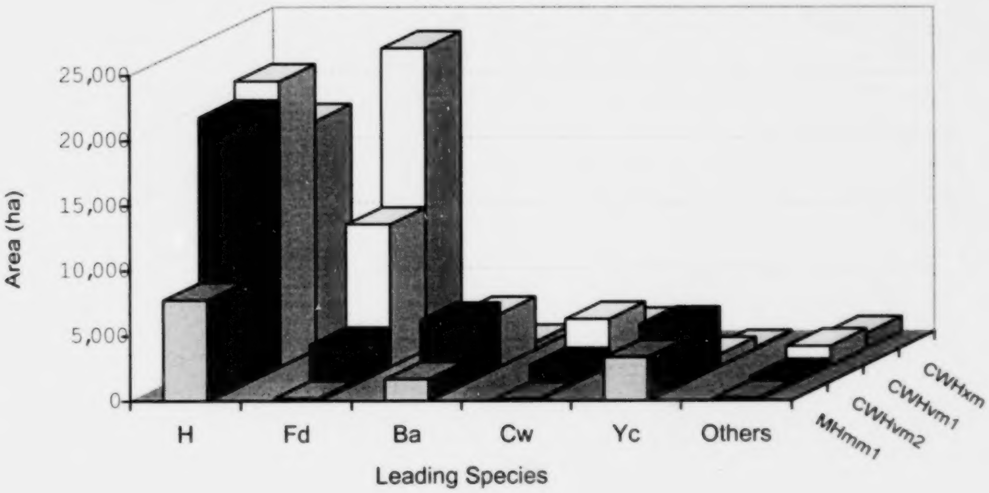
The current AAC is 1,068,000 m^3 per year, under current management and the existing timber harvesting landbase for TFL 37.

Harvest Forecast

Harvest forecast based on most recent timber supply analysis.

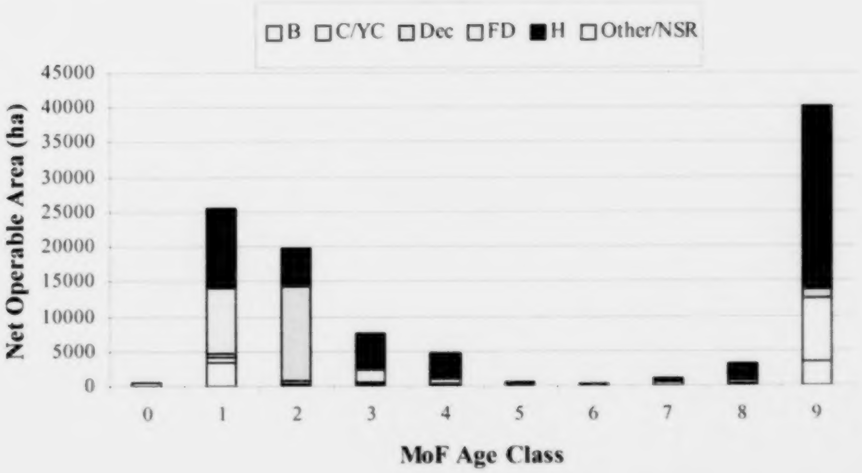


Site Types

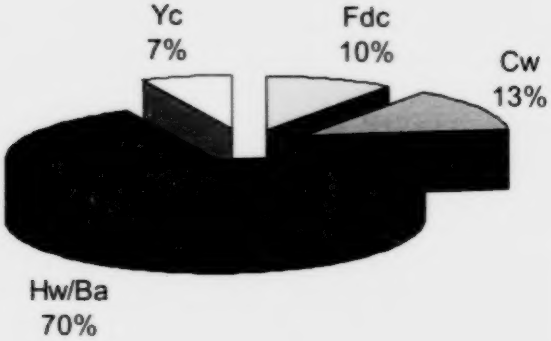


Age Class

Current Age Class Structure for TFL 37.



Current Species Distribution



2.0 Issues

The following comments and sensitivity analysis is taken from the Timber Supply Analysis Report for TFL 37.

Harvest Schedule

In the MoF Base Case the current AAC (1,068,000 m^3) is maintained for one decade with minor declines of 1.8% in year 11 and 1.4% in year 21. After year 110 the harvest rate rises considerably to 1,172,100 m^3 for the remainder of the 250-year planning horizon.

Timber Availability

The existing inventory of mature timber on TFL 37 is approximately 40 million cubic metres. Short term harvesting utilizes this inventory until existing and future managed stands become available. The key factors influencing the short-term harvest rate are:

1. The amount of mature timber on the TFL.
2. The timing of the availability of managed stands for harvest.

The critical period for determining the short-term harvest level occurs 50 to 70 years into the future at which time managed stands are required to make up a significant portion of the annual harvest.

Sensitivity Analysis

Adding Uneconomic Stands

Adding 3,169ha of stands classified as uneconomic allows the current AAC to be maintained for 10 years longer than in the MoF Base Case. There is still a required drop of approximately 1.5% during the same mid-term period until year 110.

Removing Technically Inoperable Areas

Excluding technically inoperable areas, 6,998ha (7%) of the net operable forest, results in declines throughout the planning horizon. In this sensitivity a 10% drop in harvest rate is required after maintaining the current AAC for 10 years. The long-term rate is approximately 4% lower than in the MoF Base Case. This indicates that the sites occupied by technically unconventional areas are of lower productivity on average than the stands remaining in the net operable landbase.

Removing Marginally Economic Areas

In this simulation 8,493ha of mature timber designated as marginally economic are removed from the timber harvest landbase. The current AAC cannot be maintained in this sensitivity without having a more noticeable reduction in the mid-term harvest level. Therefore a drop of approximately 1.5% is required in the first decade of the simulation with a further drop of 10% to the mid-term level.

Forest Cover

Forest cover requirements related to REA disturbance and green-up do not significantly constrain the harvest schedule at any time during the planning horizon. Only in a few cases does the disturbance level reach the maximum permitted. The Woss-Zeballos LIA (REA 54) and Tsitika GFA (REA 61) reach maximum disturbance limits during periods 3 and 4. Other smaller REAs reach maximum disturbance limits on a very infrequent basis, but these areas only make up a very small component of the timber harvesting landbase.

Growth and Yield

Any change in the time required for managed stands to reach minimum harvest age results in a modified harvest schedule. Similarly, adjusting managed stand volumes changes the harvest level developed in the MoF Base Case.

Sensitivity Analysis

Changes in Regeneration Delay

Reducing regeneration delay to zero makes a minor improvement in the harvest schedule. Alternatively, increases to regeneration delay result in decreased harvest rates. An increase to two years causes a mid-term reduction of approximately 1.5% compared to the MoF Base Case. There is less than a 1% difference in the long-term harvest rate. Increasing regeneration delay impacts negatively on the harvest for two reasons:

1. Areas take longer to reach minimum harvest age.
2. Harvested areas take longer to reach minimum green-up height.

Changes in MSYT Minimum Harvest Age

Increasing managed stand yield table (MSYT) minimum harvest age by 10 years has a more significant impact on the harvest schedule compared with increased regeneration delays. The MoF Base Case initial harvest rate of 1,068,000m^3/year cannot be sustained in this scenario without having a significant drop in harvest after year 10. The short and mid-term harvest is 3 – 13% below that of the MoF Base Case. There is virtually no difference in the long-term harvest between this scenario and the MoF Base Case. This is because not all stands are harvested as soon as they reach minimum harvest age in the later decades of the simulation. In the short and mid-term, managed stands are harvested as soon as they become merchantable in both simulations.

Reducing MSYT minimum harvest age by 10 years improves the short and mid-term harvest levels by as much as 5%. It is important to note that there is no mid-term decline in this scenario compared with the MoF Base Case. In addition, the rise to the long-term harvest level occurs 20 years earlier in this scenario. The long-term harvest rate is slightly lower than in the MoF Base Case because the harvested stands are providing less volume at minimum harvest age. Harvesting of managed stands begins in year 51, as in the MoF Base Case. However, 7,130,000m3 of managed stand volume are harvested between years 51 and 60 in this sensitivity compared to 4,768,000m3 in the MoF Base Case during the same decade. The Products-Based Silviculture option examines MSYT minimum harvest ages that are likely to be reduced in future to meet log product objectives.

Changes in Managed Stand Yield Table Volume
Reducing managed stand volumes by 10% does not significantly impact the short-term harvest rate until year 21. At that point the harvest is approximately 7% below that of the MoF Base Case. Although volumes are reduced the minimum harvest ages were not changed from the MoF Base Case. Therefore the harvest reduction is not as immediate or significant as increasing minimum harvest age for these stands. The long-term harvest rate is 10% below that of the MoF Base Case, equivalent to the drop in volume for long-term stands.

Increasing managed stands volumes by 10% improves the harvest rate by 3% in the mid-term and 10% in the long-term. The full impact of improving the yields from these stands is realized in this scenario. Figure 6.8 illustrates the harvest rate over time for some of the growth and yield sensitivity runs.

Management Considerations
Management considerations include landscape level biodiversity, wildlife management and inclusion of the 20-Year Plan.

Sensitivity Analysis

Changes in Disturbance and Green-up
In the Increase Maximum Disturbance scenario, REA disturbance was increased to a "3-pass" approach for most areas (maximum 33% < 3 metres) or up one level for visually sensitive areas (visual 1 to visual 2, etc.). There was virtually no difference in the periodic harvest rate (< 0.5%) compared with the MoF Base Case at any time. Similarly, decreasing the maximum disturbance limit to simulate a "5-pass" system (maximum 20% < 3 metres) or increasing visually sensitive areas (visual 2 to visual 1 etc.) there was less than 1% difference in the harvest rate developed for the MoF Base Case. These results confirm that maximum disturbance is not a crucial element in determining the harvest potential from TFL 37.

A number of alternative green-up height requirements were assigned to the Nimpkish HIA and the Tsitika and Woss-Vernon GFAs for this series of analyses. As noted for the maximum disturbance adjustments, these changes to green-up height had no impact on the harvest rate at any time during the planning horizon compared to the MoF Base Case. This is because managed stands achieve green-up in a short time (i.e. many in less than 10 years) because of the high productivity of the landbase. More important is the timing of managed stands reaching minimum harvest age. It is expected that green-up on the Nimpkish HIA will be lower than 3.0m and this will provide and improved harvest potential for the TFL. This is also noted in the 20-Year Spatial Analysis scenario.

Sensitivity to Incorporating the 20 Year Plan
As an alternative to the typical 20-year plans included in management plan submissions a spatial timber supply analysis was conducted for TFL 37. In addition to the landbase netdowns, growth and yield assumptions and management considerations included for the MoF Base Case option, cutblocks were identified and included in the landbase. The majority of the cutblocks were designed by Canfor engineers and covered the mature and older immature stands. Additional cutblocks were designed in the GIS environment based on similar age categories. These cutblocks were then added to the analysis database and allowed cutblock adjacency and silviculture green-up rules to be included in analysis simulation.

The spatial analysis is not intended to represent an operational plan but it does provide one possible solution to locating the harvest on the ground. The results provide an important link between the harvest schedule developed in the non-spatial analyses and operational planning which requires specific harvest locations on an annual basis. Results of the 20-Year Spatial Analysis are then mapped to identify which cutblocks are harvested during each 5-year period of the simulation. Note that 5-year simulation periods were used in the 20-Year Spatial Analysis. The total planning horizon was 20 years. The results indicate that the initial harvest level of 1,068,000m^3/year (the current TFL 37 AAC) developed for the MoF Base Case non-spatial analysis option can be carried for at least 5 years in all of the 20-Year Analysis scenarios. ***A reduction of 4.5% between the first and second periods in the MoF Base Case spatial analysis is required to meet the 3.0m silviculture green-up requirements.*** All other forest cover requirements are met during all periods of the spatial analyses as they were in the non-spatial analysis.

Silviculture green-up is a key issue in developing the short-term harvest rate on TFL 37. This was not clearly identified in the non-spatial analysis because of the model's ability to harvest small forest stands (as small as 0.25ha) compared with the larger units selected for harvest in the spatial analysis.

Reducing silviculture green-up in the Nimpkish HIA to 2.25m allows the non-spatial MoF Base Case harvest schedule to be carried for the entire 20 years of the planning horizon. Similarly, reducing silviculture green-up by approximately one year in the Enhanced Green-up scenario allows the harvest schedule to match that of the MoF Base Case non-spatial analysis.

3.0 Incremental Silviculture History

Stand Tending

Stand tending on the TFL has included spacing, commercial thinning (CT), fertilization, conifer release, and pruning. Juvenile spacing and fertilization assumptions were integrated into the most recent timber supply analysis. Table 1 outlines incremental silviculture treatments back to 1970.

Table 1 Incremental Silviculture Summary 1970 to 2001

Year	Juvenile Space (ha)	Prune (ha)	Fertilize (ha)	Commercial Thinning (m^3)	Commercial Thinning (ha)	Residual Falling (ha)	Site Conversion (ha)	Conifer Release (ha)
1970								
1971							92	
1972								
1973								
1974								
1975								
1976								
1977	9							
1978	42		15					
1979	168		383					
1980	842		740		15			42
1981	983	20	965				40	72
1982	1,726	65	1,465				13	103
1983	937	112	687				139	51
1984	400	262					50	
1985	389	139		724	8		45	
1986	361	78		721	4		27	
1987	520	53						62
1988	280	48	60	1,110	9	740		
1989	409	49	184	7,986	55	606	6	
1990	408	46	1,515	5,301	35	526	8	
1991	1,177	43		11,902	74	494		
1992	148	13	135	8,567	80	275		

Year	Juvenile Space (ha)	Prune (ha)	Fertilize (ha)	Commercial Thinning (m^3)	Commercial Thinning (ha)	Residual Falling (ha)	Site Conversion (ha)	Conifer Release (ha)
1993	312	9		8,567	108			
1994	672	127	619	12,800	89	340		
1995	530	160	323	12,228	7			
1996	160	13	305	6,386	37	400		
1997	363	191	319	9099	56			
1998	256	133						
1999	154	125	1658					
2000	54	54	1488					
Totals	11,300	1,740	10,861	85,391	648	3,381	420	
Annual Average	470	87	678	7116	54			

4.0 Opportunities to Increase Timber Supply

Products Based Minimum Harvest Ages

The Enhanced Silviculture (tree improvement) MSYTs provide higher volumes for future MSYTs and therefore the overall harvest rate is higher in this scenario. In some situations reduced MSYT minimum harvest ages can result in decreased long-term harvest rates because the volumes provided at younger ages are insufficient to support the harvest target. The productive capacity of the landbase is therefore not achieving its potential. This is not the case for the Products-Based Silviculture scenarios as revisions to the minimum harvest ages were not great and forest cover disturbance is not constraining.

Products Based MSYTs

The positive results of adjusting minimum harvest ages are clearly demonstrated in the two Products-Based Silviculture option scenarios. Future MSYT minimum harvest ages were reduced between 5 and 10 years for many of the MSYTs. The additional volume available in the short-term is due to managed stands becoming available for harvest earlier during the critical period when the existing mature inventory is at a low point. Long-term harvest levels are also improved because stands reach merchantable age in less time.

Products Based Enhanced Silviculture (Tree Improvement) MSYTs

The Enhanced Silviculture MSYTs incorporate second generation tree improvement and provide greater volumes therefore the overall harvest rate is higher in this scenario. In some situations reduced MSYT minimum harvest ages can result in decreased long-term harvest rates because the volumes provided at younger ages are insufficient to support the harvest target. The productive capacity of the landbase is therefore not achieving its potential. This is not the case for the Products-Based Silviculture scenarios as revisions to the minimum harvest ages were not great and forest cover disturbance is not constraining. (Figure 1)

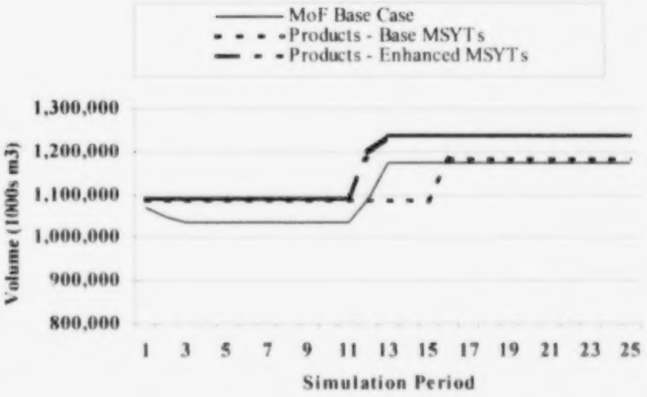


Figure 1 Products Based Harvest Flow

Enhanced Silviculture

The timber supply impacts of enhancing the level of incremental silviculture on managed stands were reviewed in this option. Canfor currently has an extensive program of spacing, fertilization, first generation seed orchards and commercial thinning. Gains from second-generation tree improvement, spacing and fertilization were evaluated in this set of analyses. A new set of managed stand yield tables incorporating gains related to these silviculture programs was developed for this option.

Additional Tree Improvement

Estimates associated with improvements from second-generation seed orchard planting stock are included in this scenario. ***The analysis results show that short-term gains of about 2% are possible, while the long-term harvest level is increased approximately 8% over the MoF Base Case.*** The increase to the long-term harvest rate occurs in year 101 in this scenario compared to year 111 in the MoF Base Case. Minimum harvest ages for the revised MSYT are only about three years less in this scenario compared with the MoF Base Case. In the long-term as the inventory of mature managed stands rises, the harvest increases to take full advantage of the enhanced productivity associated with tree improvement.

Tree Improvement plus Spacing

Similar gains are noted in the long-term for this scenario as were described for the Additional Tree Improvement scenario, approximately 8% above the MoF Base Case. However in the short-term the harvest level is slightly lower (1%) compared with the MoF Base Case. This is a result of older minimum harvest ages for the managed stands that include spacing programs. Minimum harvest ages were based on culmination of MAI for this scenario.

Tree Improvement plus Fertilization

Comparable short and long-term gains to those in the Additional Tree Improvement scenario are noted for this scenario, approximately 8% above the MoF Base. Very few stands were assigned to fertilization yield tables in this scenario because of limitations within the growth and yield models used to develop the tables. Some adjusting of SI50 values was necessary to develop the yield tables, which resulted in less definitive results. In addition, areas with SI50 of 35m or more are not expected to show any additional volume gains from fertilization. ***Long term research results indicate that multiple fertilization treatments result in significant increases in merchantable volume over a rotation. Weetman et al (1997) report that Fd stands fertilized on 8 year intervals over an 80 year rotation will yield a 13% increase in merchantable volume and will provide a 7% return on invested funds.***

Tree Improvement plus Spacing plus Fertilization

The harvest schedule developed for this scenario was virtually the same as the MoF Base Case up to year 100 when the increase to the long-term harvest rate commences. As with the other two scenarios in this option, this increase takes place one decade earlier than in the MoF Base Case because of the improved productivity associated with the enhanced MSYTs. The harvest rate up to year 100 is slightly lower than the MoF Base Case, as noted for the Tree Improvement plus Spacing scenario. Again, this is due to the older minimum harvest ages associated with the MSYTs that include spacing. Figure 2 provides a graphic summary of the harvest schedules for the Enhanced Silviculture option.

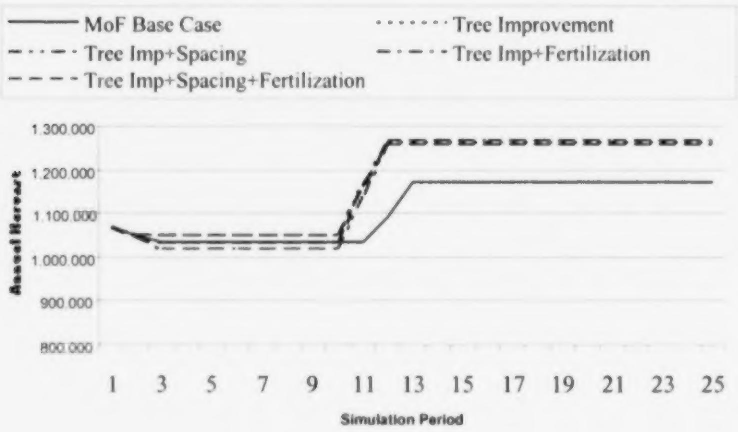


Figure 2 Enhanced Silviculture Harvest Flow

Note that increases in available volume in the various scenarios illustrated in Figure 2 are due to tree improvement and fertilization.

Potential Strategies by Response Time Frame

The response time frame is the period in which the anticipated result is expected , not the period in which the actions must commence. Potential Strategies are outlined in Table 2

Table 2 Potential Strategy by Time Frame

Response Time Frame	Strategy/Action	Anticipated Result
Short Term (1 –20 yrs)	1.Reduce time to 3m greenup by at least one year. (Currently spatial constraints result in a reduction in harvest of 4.5% in the short term) This would be accomplished by increased use of: • Large planting stock at higher densities. • Time of planting fertilization. • Aggressive brush control and animal browse protection. The above treatments are a part of our basic silviculture program, however opportunities exist to increase levels in investment. ***These treatments are not currently eligible for FRBC Enhanced Forestry funding***	Maintain MoF base case harvest level.
Mid Term (21 – 150 yrs)	1. Increase investment in second-generation seed orchards. With sufficient investment, all planting stock will originate from second generation Class A seed. 2. Increase levels of aerial fertilization. Treat all spaced and pruned stands plus selected Fdc leading stands on 8 year intervals (1500 ha per year) 3. Treat stagnating younger Fdc, Hw and Cw stands with SCHIRP fertilizer to reduce effect of salal competition (1500 ha per year)	1. Increase harvest level by 2%. (20,000 m^3) 2. Increase stand yields by 13% on treated stands. (Weetman et al –1997) 3. Reduce adjacency constraints. Additional monitoring is required to accurately determine effect on volume.
Long Term (151+ yrs)	1.Increase investment in second generation seed orchards. By year 20 all planting stock is expected to originate from second generation Class A seed 2. Increase levels of aerial fertilization. (1100 - 3000 ha per year).	1. Increase harvest level by 8%. The increase to long term actually occurs in year 101 rather than 111 in base case. 2. Increase stand yields by 13%

The timber supply analysis indicates that the greatest opportunity for increasing timber supply across all time frames exists by ***increasing investment in tree improvement and multiple fertilization treatments (time of planting and intervals of 8 years).***

5.0 Opportunities to Improve Timber Quality

Product Objectives

The following section on product objectives is taken from Management Plan 8 for the TFL.

Table 3 Product attributes for future managed stands

Product Grade	Product Attributes				
	Butt Diameter Range (cm)	Max Knot Size (cm)	Max Taper (cm/ 3m)	Minimum Length (m)	General Description
Premium	60 +	5.0	2.5	5.0	Large, clean sawlogs - dominant component of stands. Small knots and minimum taper. Pruned Fd and Hw unless knots will meet specification.
Standard	40 – 59	10.0	2.5	5.0	Logs too small or too rough to meet Premium. Other possible sorts include Cw poles and house/cabin logs.
Gang	25 – 39	10.0	2.5	5.0	Smaller, pole-sized material suitable for peeling or sawing.
Utility	0 – 24			3.0	Small material or rough large pieces unsuitable for sawlogs.

The fundamental component of our product strategy is the link between stand-level objectives and our forest estate model. Stand projection data used in the timber supply analysis was derived by grouping each BEC subzone and site series within TFL 37 into analysis units. The resultant yield tables provided additional stand and stock tables to explore our product strategy.

Tables 4 through 7 describe the product targets established for each BEC subzone and site series within TFL 37. These product targets consider our basic and incremental silviculture strategies, as well as the corresponding stand projection data used in the timber supply analysis. Our objective was to specify minimum harvest ages required to produce the desired attributes. The following approach was used:

- Select species that maximise yields while giving due consideration to unique species (Cw, Yc, and Pw) where possible and ecologically suitable.
- Set minimum volume per hectare limits that provide a reasonable expectation of economical harvesting operations.
- Set piece size targets. Table 3 provides a description of proposed second growth log grades. Butt diameters are used as TIPSY presents only DBH in output.
- Set minimum piece size targets for each site series (Tables 4 to 7). Dimensions chosen allow for a wide variety of potential products without the need to delay rotations beyond MAI culmination on the majority of our sites.

Table 4 MHmm1 Product Strategy

Site Series No.	Product Targets					
	Product Grade	Minimum DBH (cm)	Percent of Total Volume	Minimum Total Volume (m^3/ha)	Minimum Harvest Age	Expected Species Mix at Rotation (Percent by Volume)
01	Gang	30	67	398	130	Hw/Hm (30) Ba (44) Yc (26)
01p	Gang	30	67	398	130	Hw/Hm (28) Ba (42) Yc (30)
03	Gang	30	67	398	130	Hw/Hm (24) Ba (44) Yc (32)
05	Gang	30	67	386	110	Hw/Hm (22) Ba (38) Yc (40)
07	Gang	35	75	350	125	Hw/Hm (24) Ba (30) Yc (46)

Table 5 CWHvm2 Product Strategy

Site Series No.	Product Targets					
	Product Grade	Minimum DBH (cm)	Percent of Total Volume	Minimum Total Volume (m^3/ha)	Minimum Harvest Age	Expected Species Mix at Rotation (Percent by Volume)
01	Standard	45	33	750	70	Hw (60) Ba (21) Yc (19)
01s	Gang	35	67	640	85	Hw (65) Ba (8) Yc (21) Cw (6)
01p	Gang	35	67	663	95	Hw (63) Ba (8) Yc (21) Cw (8)
03	Gang	35	75	767	95	Fdc (20) Cw (41) Hw (38) Ba (1)
04	Standard	45	33	668	75	Hw (74) Yc (26)
05	Gang	35	75	767	95	Ba (56) Yc (30) Hw (14)
06	Gang	35	75	745	95	Ba (22) Yc (39) Hw (39)
06s	Gang	30	75	455	125	Hw (46) Ba (12) Yc (38) Cw (4)
06p	Gang	30	75	455	125	Hw (45) Ba (12) Yc (39) Cw (4)
07	Gang	35	75	751	85	Ba (52) Yc (30) Hw (18)
09	Standard	45	50	617	100	Cw (38) Yc (44) Hw (18)
11	Gang	35	75	414	130	Cw (42) Yc (48) Hw (10)

Table 6 CWHvm1 Product Strategy

Site Series No.	Product Targets					
	Product Grade	Minimum DBH (cm)	Percent of Total Volume	Minimum Total Volume (m^3/ha)	Minimum Harvest Age	Expected Species Mix at Rotation (Percent by Volume)
01	Standard/Premium	45	50	816	60	Fdc(71) Hw(19) Cw (10)
01s	Gang	30	67	372	130	Hw (81) Cw (18) Ba (1)
01p	Standard	45	33	715	70	Hw (82) Cw (18)
03	Standard	45	33	692	55	Fdc(66) Hw(19) Cw (15)
04	Standard	45	50	708	80	Fdc(66) Hw(19) Cw (15)
05	Standard/Premium	45	67	959	55	Hw (56) Cw (15) Ba (29)
06	Standard	45	50	877	65	Hw (56) Cw (22) Ba (22)
06s	Standard	45	50	350	120	Hw (69) Cw (16) Ba (15)
06p	Gang	35	67	707	90	Hw (69) Cw (22) Ba (9)
07	Standard/Premium	45	50	906	80	Hw (38) Cw (40) Ba (22)
09	Standard/Premium	45	50	890	70	Hw (35) Cw (39) Ba (26)
12	Gang	35	75	418	130	Cw (40) Yc (40) Hw (19) Ba (1)
14	Standard	45	67	653	80	Cw (86) Hw (13) Ba (1)

Table 7 CWHxm Product Strategy

Site Series No.	Product Targets					
	Product Grade	**Minimum DBH (cm)**	**Percent of Total Volume**	**Minimum Total Volume (m^3/ha)**	**Minimum Harvest Age**	**Expected Species Mix at Rotation (Percent by Volume)**
01	Standard/Premium	45	67	949	65	Fdc (64) Cw (11) Hw (25)
01p	Standard	45	33	640	65	Fdc (62) Cw (15) Hw (23)
03	Standard	45	50	756	70	Fdc (81) Cw (14) Hw (5)
05	Premium/Standard	45	67	884	50	Fdc (70) Cw (22) Hw (8)
06	Standard	45	33	780	70	Hw (70) Cw (30)
06p	Gang	35	75	813	100	Fdc (2) Cw (30) Hw (68)
07	Premium/Standard	45	67	876	55	Fdc (67) Cw (27) Hw (6)
08	Premium/Standard	45	67	961	50	Fdc (69) Cw (26) Hw (5)
12	Gang	35	67	762	75	Cw (81) Hw (19)

Each site series has a proposed product, minimum DBH, percent of total volume and minimum total volume requirements. All criteria must be met before the stand is harvested in the forest estate model. For example, for the CWHxm 01 site series, two thirds of the stand must be at least 45cm and net volume must be 949 m^3/hectare before the stand will be cut. Based on our species and site quality assumptions for this site series, this will occur at age 65.

Potential Treatments

The following outlines potential treatments, some of which are ineligible for FRBC Enhanced Forestry funding, (Table 8). Stand selection criteria are outlined in TFL MP 8.

Table 8 Potential Treatments

Treatment	Potential Treatment Regimes	Treatable Area (annual)
High Density Plantations	Manage highly productive sites in the CWHxm and vm1 to high densities to promote rapid crown lift, low taper, and consistent log sizes. This treatment is aimed at reducing knot frequency and size on the dominant component of stands thereby increasing the proportion of premium sawlogs.	350 ha
Pruning	Remove branches on dominant component of stands on our best sites to maintain or increase proportion of premium sawlogs.	60 ha
Juvenile Spacing	Juvenile space to 1000 sph (overstory) and retain understory of 1/3 average stand height to create a two tiered stand. This is designed to ameliorate volume loss, encourage self-pruning, and provide a layer for subsequent commercial thinning from below. Stand level modelling for spacing indicates a reduction in volume at rotation with a higher mean diameter. Product piece size objectives can be met sooner at the cost of a reduced stand volume. Due to model limitations however, volume estimates did not take understory tier and interim commercial thinnings into account.	10 - 100 ha

Potential Strategies by Response Time Frame

The response time frame is the period in which the anticipated result is expected, not the period in which the actions must commence. The following is based on timber supply analysis assumptions and FRBC multi year funding levels. This does not include a financial analysis of potential returns/losses resulting from juvenile spacing and pruning expenditures.

Table 9 Potential Actions to Increase Timber Quality

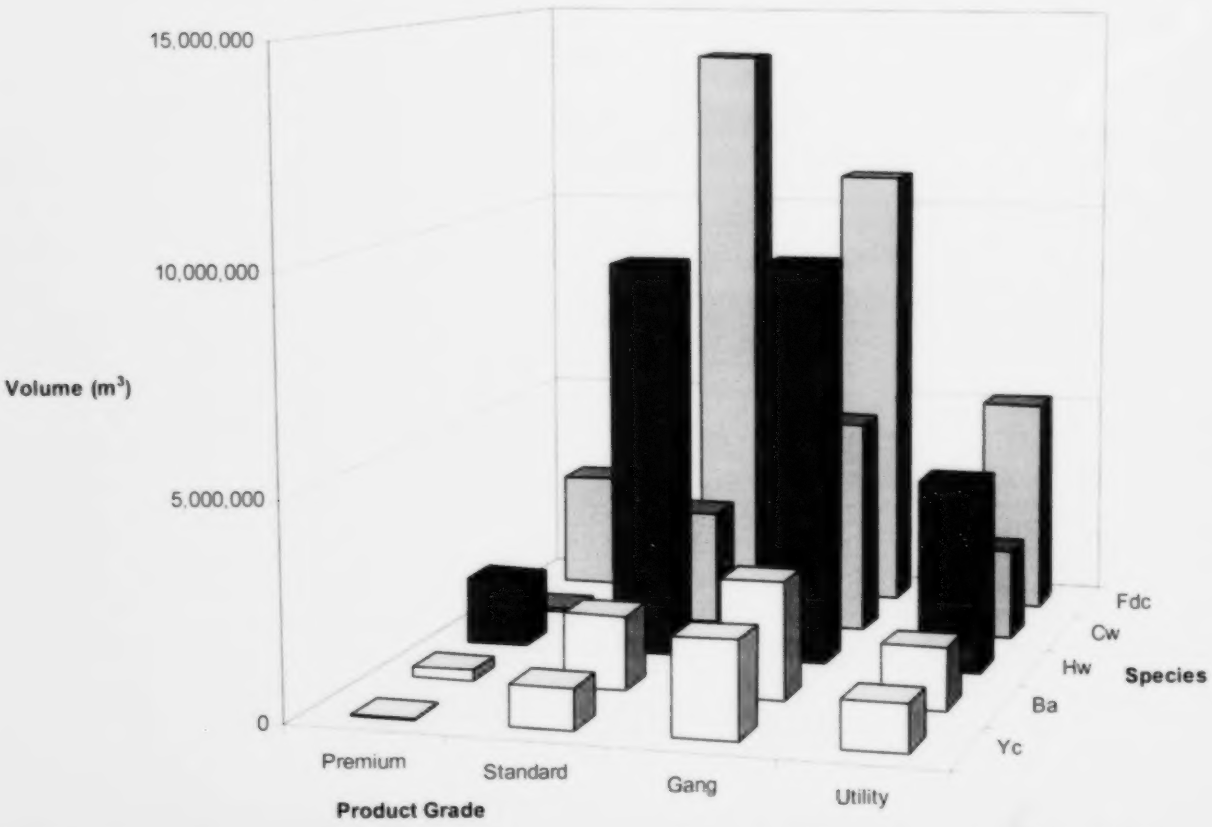
Response Time Frame	Strategy/Action	Anticipated Result
Short Term (1 - 20 yrs)	None	
Mid Term (21 - 150 yrs)	1. Juvenile space 300 ha. 2. Prune 150 ha.	1. and 2. Maintain historical proportion of premium sawlogs. Reduce proportion of utility grade.
Long Term (151+ yrs)	As above	As above

Timber Quality Forecast Scenarios

This quality scenario is based on the assumptions built into the most recent timber supply analysis.

To get a picture of species and grade distributions across the landbase, estimates of expected volumes at product rotation and net operable area were extrapolated into the long term. This provides the species and grade distribution illustrated in Figure 3.

Figure 3 Expected managed stand volumes by species and product



Figures 4 and 5 further clarify the picture by expressing expected percent species distribution and percent log grade distribution across the landbase.

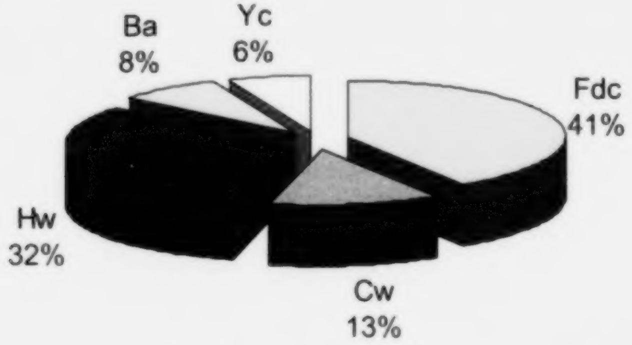


Figure 4 ***Projected Species Distribution***

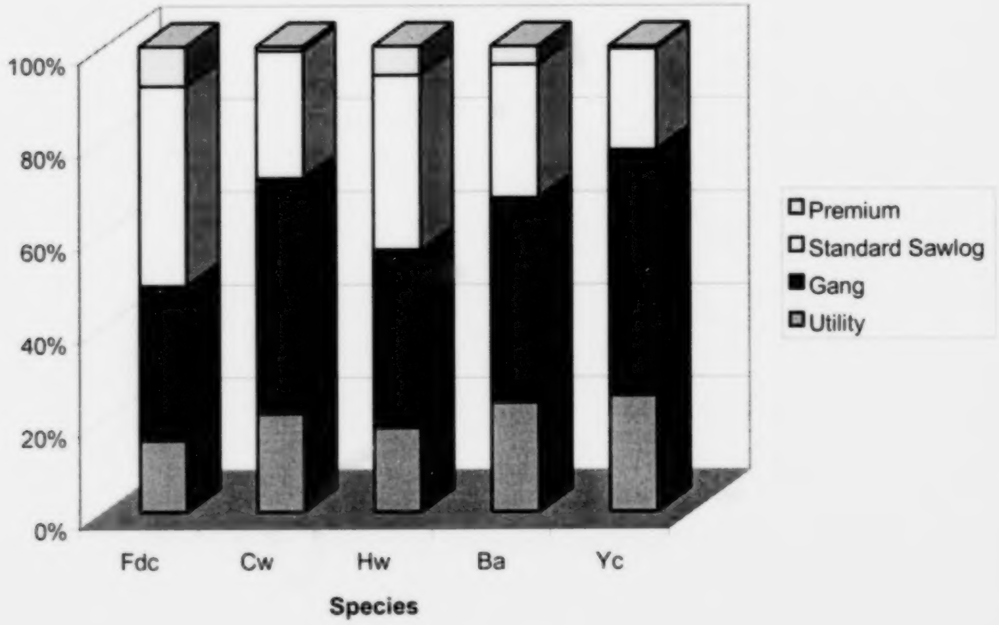


Figure 5 ***Projected product grade breakdown by species***

For comparison, a similar illustration of current species and grade profile was completed over a five year period (1993 – 1997). Figure 6 shows current species distribution and Figure 7 illustrates current grade distribution. Note that grade breakdown in Figure 7 is based on current industrial log grade specifications.

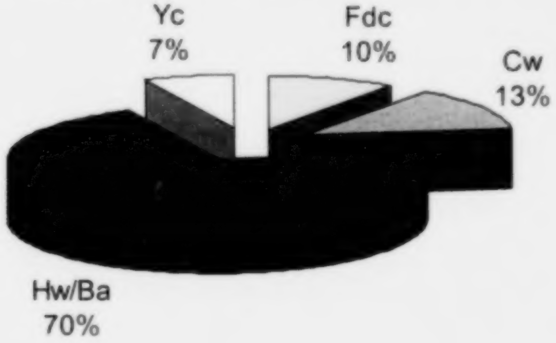


Figure 6 – Current species distribution

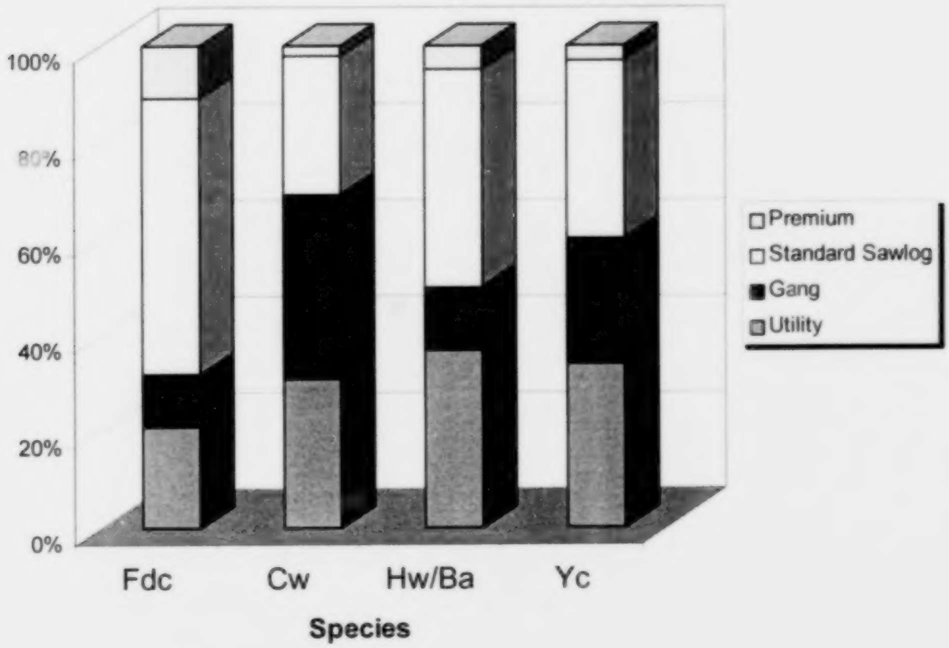


Figure 7 Current product grade distribution

This comparison of future and current species and product grade distributions indicates three major points:

1. Future managed stands will bring about a shift in species dominance from hemlock and balsam to Douglas-fir. Yellow cedar and western red cedar proportions will not change significantly, although management activities will focus on promoting these species where appropriate.
2. While overall piece sizes are smaller, the overall log quality distribution improves as the proportion of utility grade in future managed stands is lower. This is due to the nature of thrifty managed stands to be relatively low in disease and physical defects. Proportion of premium grade logs by species is forecast to be maintained at historical levels (approximately 5%).
3. Projected managed stands will result in a well diversified portfolio of species and grades allowing maximum flexibility in future wood products manufacturing.

This product strategy provides a foundation for the silviculture regimes outlined in the silviculture standards and procedures in Management Plan 8. Minimum harvest ages determined based on product piece size and minimum volume objectives are available at a stand level for operational planning and linked at a forest level for strategic planning. Accordingly, our silviculture strategies for future managed stands target species selection and stocking levels by site series according to both ecological suitability and future product objectives.

6.0 Incremental Silviculture Strategy

Working Targets

Working Target 1 (Quantity)

To sustain an annual harvest level as high as the current AAC of 1,068,000m^3 in the short term, increase to 1,086,100 m^3 in the mid term and finally increasing to a long term harvest of 1,182,500. This will require a combination of silviculture treatments which includes aggressive basic reforestation, increased investment in tree improvement and fertilization and harvest ages based on product targets. *Note: Harvest levels suggested here are based on potential opportunities identified in sensitivity analysis for the TFL Management Plan and are currently not approved by the Chief Forester.*

Working Target 2 (Quality)

To produce a product profile by species as outlined in Figure 5.

Silviculture Strategies

As per Potential Strategies by Response Time Frame, pages 11 and 16.

Product Objectives

As per Product Objectives page 12.

7.0 Incremental Silviculture Program

See Excel Sustainable Harvest Summary Tables in the Appendix.

8.0 References

Management Plan 8 for Tree Farm License 37 - Canadian Forest Products Ltd. 1998.

TFL 37 Annual Report of Operations, Canadian Forest Products Ltd., 1961 to 1999.

Ten –Year Growth Response of Coastal Douglas-fir on Vancouver Island to N and S Fertilization in an Optimum Nutrition Trial. G.F. Weetman, C.E. Prescott, F. L. Kohlberger, R.M. Fournier in: Canadian Journal of Forest Research - September 1997.

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement. The template design allows completion in a consistent format for all management units across the province. Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** TFL 37 - Canadian Forest Products Ltd.

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

TFL 37 - Canadian Forest Products Ltd.
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**				
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority		
Stand Tending										
Surveys	60	60	60	60	60	133.33	8000	1	PSTs, SMPs, layout etc	
Spacing	60	60	60	60	60	1800.00	108000	2	Community Forestry	
Pruning	60	60	60	60	60	1800.00	108000	2	Community Forestry and First Nations	
Fertilizing	1400	1400	1400	1400	1400	296.43	415000	1		
Other	0	0	0	0	0	0.00	0			
Totals hectares	1580	1580	1580	1580	1580	404.43	639,000			700000
Planning and prescriptions							0			
Total dollars							639,000			61,000
Forest Health Enhancement										
Spacing	0	0	0	0	0	0.00	0			
Pruning	0	0	0	0	0	0.00	0			
Other treatments	0	0	0	0	0	0.00	0			
Totals hectares	0	0	0	0	0	0.00	0			
Habitat Supply and Biodiversity Enhancement										
Riparian treatments	35	0	0	0	0	1,742.86	61000	1		
Non-riparian treatments	0	0	0	0	0	0.00	0			
Totals hectares	35	0	0	0	0	1,742.81	61,000			
Domestic Range										
Treatments	0	0	0	0	0	0.00	0			
Enhanced Forestry Activities - Management Unit Total										
Surveys	60	60	60	60	60	133.33	8,000			
Spacing	60	60	60	60	60	1,799.97	108,000			
Pruning	60	60	60	60	60	1,799.97	108,000			
Fertilizing	1400	1,400	1,400	1,400	1,400	296.43	415,000			
Other stand tending activities	35	0	0	0	0	1,742.66	61000			
Totals hectares	1615	1580	1580	1580	1580	433.43	700,000			
Planning and prescriptions							0			
Studies funding							0			
Total dollars							700,000			

1/4/2006

TFL 37 - Canadian Forest Products Ltd.
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**			
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority	
Legal Obligations									
Surveys	0	0	0	0	0	#DIV/0!	0		
Site preparation	0	0	0	0	0	0.00	0		
Planting	0	0	0	0	0	0.00	0		
Brushing	0	0	0	0	0	0.00	0		
Max. density spacing	0	0	0	0	0	0.00	0		
Totals hectares	0	0	0	0	0	0.00	0		
Seed purchase	0	0	0	0	0	0.00	0		
Total legal obligations							0		
Backlog Reforestation									
Surveys	0	0	0	0	0	#DIV/0!	0		
Site preparation	0	0	0	0	0	0.00	0		
Planting	0	0	0	0	0	0.00	0		
Brushing	0	0	0	0	0	0.00	0		
Totals hectares	0	0	0	0	0	0.00	0		
Seed purchase	0	0	0	0	0	0.00	0		
Prescriptions and planning dollars							0		
Total backlog reforestation							0		
Impeded areas									
Surveys	300	300	300	300	300	28.00	8400	2	Free Growing surveys on pre Oct 1, 87 blocks.
Brushing	10	0	0	0	0	600.00	6000	1	Brushing treatments that are identified in FG surveys
Density spacing	0	0	0	0	0	0.00	0		
Totals hectares	310	300	300	300	300	46.45	14,400		
Prescriptions and planning dollars							0		
Total impeded areas							14,400		
Site Restoration									
Fill planting	0	0	0	0	0	0.00	0		
Rehabilitation	0	0	0	0	0	0.00	0		
Reforestation	0	0	0	0	0	0.00	0		
Totals hectares	0	0	0	0	0	0.00	0		
Seed purchase	0	0	0	0	0	0.00	0		
Prescriptions and planning dollars							0		
Total site restoration							0		
Backlog Program Activities - Management Unit Total									
Surveys	300	300	300	300	300	28.00	8400		
Site preparation	0	0	0	0	0	0.00	0		
Planting	0	0	0	0	0	0.00	0		
Brushing	10	0	0	0	0	599.88	6000		
Density spacing	0	0	0	0	0	0.00	0		
Totals hectares	310	300	300	300	300	46.45	14400		
Seed purchase	0	0	0	0	0	0.00	0		
Prescriptions and planning							0		
Recommended studies							0		
Total backlog program							14,400		

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify

TFL 37 - Canadian Forest Products Ltd.
Instructions for developing the Performance Measures Table for FRBC investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on TFL 37 Management Plan 8

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.77	0	0.25	0	1.9	0.25	0	0	0.46	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	
Provincial factors for estimated value gain at harvest							7	20	2	
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.26	0.1

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	**Nursery Seedling Production**	**Silviculture Surveys**
A Tree improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	0		
Enter area of all other sites planted with improved trees	1,286		
Total area affected by tree improvement	1,286		
B Nursery production of seedlings			
Enter sowing requests from SPAR		1,500,000	
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			60
Total EFP surveys from the EFP table			300
Total backlog surveys from the backlog table			119
33% of all silviculture surveys			
Optionally, you may provide a more exact estimate:			1,153
Estimate area of regen delay surveys			1,220
Estimate area of free growing surveys			60
Estimate area of pre-stand tending surveys			(A) 2,433
Estimate of total surveys that will affect timber supply			
Surveyed area that will affect timber supply			2,433
Replace with (A) if a more exact estimate is calculated			
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR)			
Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas)			1,220
Estimate area that will be classified as free growing after a survey in 2002/2003			

Habitat Supply
Help staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity

TFL 37 - Canadian Forest Products Ltd.
Performance Measures Based on Activities Planned for 2002/2003
Based on TFL 37 Management Plan 8

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	1,286	1,286	2,433	0	0	10	60	60	1,400	6,570	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.77	0	0.25	0	1.9	0.25	0	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	39,536	0	0	163	0	0	42,000		81,699
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			1,220								1,220
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							7	20	2		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.26	0.1	
3.2	Estimated total employment (person days/year)	129	437	243	0	0	26	238	272	364	657	
3.3	Estimated total full time equivalent positions (FTE)	1	2	1	0	0	0	1	2	2	4	13
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											35
5.3	Est. area with secondary value provided to biodiversity (ha)											0

TFL 37 - Canadian Forest Products Ltd.
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	1,615	1,580	1,580	1,580	1,580	433	700,000
Planning, prescriptions and seedlings							0
Backlog Program Field Activities	310	300	300	300	300	46	14,400
Planning, prescriptions and seedlings							0
Totals	1,925	1,880	1,880	1,880	1,880		714,400

Performance Measures

Potential total merchentable volume increment in 65 years	81,699 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	1,220 ha
Estimated total full time equivalent positions generated	13 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	35 ha
Estimated area with secondary value provided to biodiversity	0 ha

2002 - 2003 Regime Table
TFL 37 - Canadian Forest Products Ltd

Rank	Regimes	Opportunity (ha/yr)	Timber Supply Effects short	Timber Supply Effects medium	Timber Supply Effects long	Wood Quality	Habitat	Direct Silv Jobs (days/ha)	Direct Cost ($/ha)
	Fertilization								
1	Fdc leading	1400	0	+	+	+	+	0.26 (CFP 2000 actual)	296.00
	Juvenile Spacing								
2	Community Forestry Program, local contractors, First Nations	60	0	0	+	+		3.96 (MoF)	1850.00
	Pruning								
3	First lift pruning (completed under Community Forestry and First Nations initiatives)	60	0	0	0	+	+	4.54 (MoF)	1500.00

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): TFL 37

Stand Tending	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)**
Surveys	60	60	0.0	1	1	33	133.33	304.0	PSTs, SMPs, layout etc
Spacing	10	60	500.0	2	2	1980	1800	-9.1	Community Forestry
Pruning	60	60	0.0	2	2	2420	1800	-25.6	Community Forestry
Fertilizing	3000	1400	-53.3	1	1	330	296.43	-10.2	

Forest Health	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)**
Spacing	0	0	#DIV/0!	0	0	1980	n/a	#VALUE!	
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Habitat Supply/ Biodiversity									
Riparian	0	36	#DIV/0!	0	0	3000	1742.86	-41.9	
Non-Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): TFL 37

Legal Obligation	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site preparation	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
B/L Reforestation									
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site Prep	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	

Impeded	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	300	300	0	2	2	33	22	-33.3	FG surveys on pre Oct 1 blocks
brushing	0	10	#DIV/0!	0	1	1155	600	-48.1	brushing treatments that are identified in FG surveys
Site Resoration									
Fill planting	0	0	#DIV/0!	0	0	1320	0	-100.0	
Rehab	0	0	#DIV/0!	0	0	2200	0	-100.0	
Reforestation	0	0	#DIV/0!	0	0	1320	0	-100.0	

Evaluation Rating of TFL 37 Sustainable Harvest RMP

Category	yes	partly	no	Rating (H, M, L)
Submitted by June 27 (TFL) or July 16 (TSA).		✓		M
Basic data for TFL provided, area, current AAC, current harvest forecast, site/age class species profile. Long Run Sustainable Yield stated.	✓			H
History of past treatments provided.	✓			H
Text submitted identifying backlog and enhanced forestry program issues.	✓			H
Opportunities to increase timber supply addressed in text, e.g. short/mid/long-term, timber flow benefits. Consistent with Type 1 or 2 Analysis.	✓			H
Opportunities to increase timber value addressed in text, if none so stated. Consistent with Type 1 or 2 Analysis.	✓			H
Opportunities to increase habitat supply/biodiversity addressed in text, if none so stated. Consistent with Type 1 or 2 Analysis.		✓		M
Working targets proposed for volume/value/habitat.	✓			H
Satisfactory treatment regime table provided.	✓			H
Satisfactory rationale provided for the priority ranking of activities i.e. link to MP ,TSR, other . Consistent with Type 1 or 2 Analysis.	✓			H
Where habitat supply/biodiversity activity indicated, rationale on why the silviculture treatment specifically maintains the non-timber values.		✓		M
All summary tables submitted satisfactorily.	✓			H
Projected job outcome of proposed program stated.	✓			H (# jobs in Perf. Measures/text)
Opportunities to achieve FRBC performance goals		✓		M
Is program within reasonable range of last year's SH RMP projections for year 2002/03.	✓			M +JS, -FE, - habitat
Plan Comparison Table submitted with explanation for variations.	✓			H
Performance measures, where TFL used local factors supporting rationale provided.	✓			H CFP actual FE jobs used
SH study form completed satisfactorily			N/A	N/A
Communication log documents partnership group and stakeholder discussions and issues.			✓	N/A
Other (describe) Text on submitted disc (Incremental Silv. Plan provided)	✓			H
Overall rating	n/a	n/a	n/a	**H**

Appendix IV

International Forest Products Ltd RMP Submission

- **TFL 45 2002-2003 Resource Management Plan**

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- **Sustainable Harvest Data Template Tables**
- **Enhanced Forestry Table**
- **Backlog Table**
- **Performance Measures Table**
- **Management Unit Summary**
- **Plan Comparison Table**
- **Licensee Submission Evaluation Form**

TFL 45 2002 – 2003

Resource Management Plan

June 20, 2001

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1. Incremental Silviculture Strategy Summary

The Incremental Silviculture Strategy Summary is part of the TFL 45 Type I Analysis done by Timberline Forest Consultants in August 2000.

General Strategy

As stated earlier, short and medium term timber flow on TFL 45 is constrained by timber availability at decade 12. Because of the timing of this constraint, considerable opportunity exists to enhance timber supply prior to this point. Generally, any strategy, which increases timber availability prior to decade 12, will have a positive impact on short and medium term timber flow. Tactics, which accelerate the development of managed stands, are particularly important in this regard. These tactics impact on timber availability in three positive fashions:

- Reduced time to greenup;
- Reduced minimum harvest ages; and
- Increased yields at rotation.

Quality targets have not been explicitly established for TFL 45. Several of the silviculture tactics identified for improvement of quantity are also expected to have a positive impact on quality. In addition, pruning could be implemented specifically to improve the supply of premium log grades. However, the cost of such a program is substantial, and more explicit definition of quality objectives should be completed prior to undertaking a pruning program.

Working Targets

The preceding analysis indicates the following working target is attainable:

- Maintain the existing AAC (220,000 m^3) for a period of 40 years;
- Maintain a mid-term level of at least 179,000 m^3; and
- Achieve a long-term level of 212,000 m^3.

Log Product Objectives

As stated, log product quality objectives have not been explicitly developed for TFL 45, nor was it possible to develop focus on this issue during the workshop. The following are product objectives at the log level, which have been developed for another TSA on the coast (Strathcona). These should be used as a starting point for further discussions on this issue.

Quality Class	Species	Characteristics
Premium Log:	Douglas-fir, clear, pruned	45 + cm min DBH, pruned, min 5 m log.
	Douglas-fir, large timber	55 + cm min DBH, unpruned.
	Douglas-fir, clear, unpruned	long rotation
	Hemlock, large timber	55 + cm min DBH, unpruned.
	Hemlock, clear, unpruned	long rotation.
	Cedar, large timber	55 + cm min DBH, unpruned.
	Cedar, clear, unpruned	2 rotations in stand.
Sawlog:	Minimum average stand DBH of 45 cm and min. stand vol. of 350 m^3/ha.	

Silviculture Strategies

Strategies to Maintain Existing Timber Supply Target

Strategies to Increase the *Quantity* of Future Timber Supply

IM 1, IM 2, ST 1 Achieve earlier greenup through:

a) conifer release (50 ha/year) in North;

b) pre-commercially thin (50 ha/year), primarily in south; and

c) fertilize 17 ha/year @ planting.

ST 2 Achieve higher volumes in existing stands through fertilizing 200 ha/year late in rotation.

ST 3 Increase access to timber in VQOs by harvesting 60 ha/year using variable retention.

ST 4 Increase area of THLB through alder conversion on approximately 20 ha/year.

MT 1 Achieve small increase in medium term supply through commercially thinning 15 ha/year.

LT 1 Increase volumes in managed stands by planting genetically improved stock.

Strategies to Increase the *Quality* of Future Timber Supply

Q 1 Increase premium log content of future stands through pruning 30 ha/year, mainly in South.

Strategies to Increase the *Quantity* or *Quality* of Future Habitat Supply

H 1 Accelerate development of old-growth characteristics through by spacing 10 ha/year.

Summary of Information and Research Needs

No specific information/research needs were identified during the course of the workshop. However, in general, the following uncertainties are recognized:

1. Genetic gain expectations for current and future genetically improved stock;
2. Expected response to early and late fertilization regimes;
3. Yield and stand structural responses to variable retention harvesting systems; and
4. Yield and stand structural responses to commercial thinning.

2. TFL Enhanced and Backlog Program Issues

TFL North (Port McNeill District)

This portion of the TFL has more opportunities for backlog silvicultural projects than the south but is also more logistically difficult. There are a number of drainages that empty right into Knight Inlet and have poor or non existent road access. There are four main issues that exist in the northern TFL.

1 Alder brushing – there is the opportunity to conduct alder girdling projects for the next two to three years at Sallie Creek and also at the Head of Knights. These project will involve some helicopter access blocks. There is a significant amount of alder in Sims Creek which has not been field checked yet. There is a high probability that much of this area is not treatable due to it being too old, poor conifer understory (possible a spruce understory – high weevil hazard area) and high likelihood of abundant fish creeks throughout the aldered areas. To further complicate matters the only access into the valley is by helicopter.

2 Aerial fertilization – this area has been heavily planted to Douglas-fir in the past and a lot of density control has occurred. There are a lot of fir leading stands that would be good candidates for fertilization.

3 Site Restoration – there are a number of areas that were planted to sitka spruce and have experienced heavy P. strobi damage. It is expected that some of these stands may not have sufficient levels of other conifer species in order to bring stocking up to satisfactory levels. Most of these sites will be helicopter surveyed this fiscal year. These sites can be very productive but could be very expensive to treat.

TFL South (Campbell River District)

The southern portion of the TFL has traditionally been much easier to manage. This is reflected in that there is very little alder impeded areas to treat. It is estimated that there is approximately 50 Ha of lower priority alder to treat. The biggest difference with the south TFL is the milder climate and sites that have high levels of natural fill in. For this reason the bulk of the TFL spacing will occur in the south. There are many sites planted to Fd/Cw but receive very high levels of Hw fill in. At FTG these stands will have a Hw component of 75 % plus. Spacing of these stands is done for a number of reasons. In order to increase the Fd/Cw component in these heavy Hw ingress areas spacing is required. In addition to the species conversion factor the AAC Base Case assumes that stands will be ready for harvest 10 years less than mai culmination. It is thought for the stands that have greater than 5,000 stems per hectare that density control will have to occur in order for these stands to be a merchantable harvest size prior to mai culmination.

There are a lot of opportunities for doing enhanced silviculture on the southern TFL. There are significant areas planted to Fd and have had density control. Large fertilization projects could occur. Most of the pre 1987 stands have been spaced and post FTG appraisal stands are now being looked at.

3. *Silviculture Regimes and Investment Priorities*

The following table indicates incremental silviculture regimes which are suitable for attaining the above working targets and strategies.

Regime Table: TFL 45

Treatment		**Location**	**Ha/yr**	**Timber Supply**			**Quality**	**Habitat**			**Direct Jobs**	**Direct Cost**	**Priority**
				Sh	**Me**	**Lo**		**OG**	**RI**	**W**	**Days/ha**	**$/ha**	
	Surveys	North and South	400								0.1	75	1
IM 1	Conifer Release	North	50	0	0	0	0	0	+	+	2.0	1,500	1
IM 2	PCT-fibre	Mainly South	50	0	0	0	+	+	+	+	4.5	1,800	1
ST 1	Fertilization @ planting	South and North	200	+	+	+	0	0	0	0	0.5	130	3
ST 2	Fertilization-late rotation	South and North	200	+	+	+	+	0	0	0	0.1	320	2
ST 3	Alternative silviculture in VQOs	4 0 % North 60 % South	60	+	+	+	0	+	+	+	1.0	3,000	2
ST 4	Alder Conversion	South and North	20	+	+	+	0	0	+	+	1.0	25,000	4
MT 1	Commercial Thinning	North and South	15	0	0	0	+	0	+	+	0.5	4,000	4
LT 1	Genetic Improvement	South and North	200	0	0	+	+	0	0	0	0.0	0.0	4
Q 1	Pruning	Primarily South	30	0	0	0	+	0	0	+	10.0	2,500	4
H 1	PCT-habitat	North and South	10	0	0	0	-	0	+	+	4.5	1,800	4

4. SH Data Template

See attached Excel files.
The SH Data Tables were done for the North and South portions of the TFL as well as a summary table for both regions.

5. Communication Log

Agency:
TFL: TFL 45
TSA:

Communication Log for the Sustainable Harvest Objective 2002-2003

(also include community/stakeholder meetings to review silviculture strategies and SH plans)

Date	*Name (person contacted)*	*Representing*	*Communication Method*	*Comments/Issues*

5. *TFL Plan Comparison*

The TFL Plan Comparison can be found on the attached Excel files.
TFL Plan Comparison Tables have been separately for the South and North regions of the TFL.

7. Proposed TFL Studies Form

<table>
<tr><td colspan="7">STUDY Outline</td></tr>
<tr><td>Short Description of Study</td><td colspan="6">Previous licensee spaced stands to a low density (400 – 600 SPH) and many of these stands are now in 35 to 45 years old. These stands would be assessed for the type of habitat they have developed into</td></tr>
<tr><td>Background / Justification</td><td colspan="6">MoELP wants licensees to do wildlife habitat enhancement projects. IFP wants to assess and map the l that has been produced from past SH activities before additional projects are started. This study will he creating a habitat needs determination for the TFL.</td></tr>
<tr><td>Methods & Procedures</td><td colspan="6">Past SH activities would be mapped and stands would be broken up into stratums. Field assessments w occur and habitant types would be quantified.</td></tr>
<tr><td>Lead Contact for Study</td><td colspan="6">Interfor, Nigel Ross</td></tr>
<tr><td>Key partners affected by this issue</td><td colspan="6">MoELP</td></tr>
<tr><td>Temporal Scale of importance (how urgent is this?)</td><td colspan="6">This project is of medium urgency</td></tr>
<tr><td>Spatial Scale (small vs wide reaching impacts)</td><td colspan="6">Medium based spatial scale. Previous licensee (BCFP) was a major player in the forest indus results from this assessment could be utilized in many other locations</td></tr>
<tr><td>Link to Resource Management Plans, Timber Supply Review, higher level plans</td><td colspan="6">This assessment will provide a guide to further habitat enhancement work within TFL 45. Wi guidance in the RMP process, Management and Working Plans and Forest Development Plan selection of Old Growth Management Areas.</td></tr>
<tr><td rowspan="2">Strategic Objectives:
(tick all that apply)</td><td>SH[1]</td><td>EEV</td><td>SSFM</td><td>C&I</td><td>VA[2]</td><td>WF</td></tr>
<tr><td>X</td><td></td><td>X</td><td></td><td></td><td></td></tr>
<tr><td colspan="3">Region: Vancouver Study (Y/N): Y
New Project for 2002/03 (Y/N): Y
Proponent: Interfor
Number of years to complete: 1</td><td colspan="4">Mgmt. Unit: TFL 45 (north and south)
$ to Complete $15,000
Workplan #: PAM02508/02608
Activity Location #:Knight Inlet/ Fanny Bay/ West Thurlow</td></tr>
</table>

---

[1] SH = Sustainable Harvest EEV = Enhance Environmental Values SSFM = Strengthen Sustainable Forest Management C&I = Criteria and Indicators of Sustainability VA = Value Added CO = Communities WF = Workforce

[2] We will include needs for these strategic objectives if identified but will not ask specifically for these needs.

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** TFL 45 Port McNeill

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

TFL 45 Port McNeill
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	600	600	600	600	600	25.00	15000	2
Spacing	50	0	50	0	0	2500.00	125000	1
Pruning		0	50	0	50	#DIV/0!	0	
Fertilizing	500	500	500	500	500	300.00	150000	2
Other	0	0	0	0	0	0.00	0	
Totals hectares	1150	1100	1200	1100	1150	252.17	290,000	
Planning and prescriptions							15,000	1
Total dollars							305,000	
Forest Health Enhancement								
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	#DIV/0!	0	
Totals hectares	0	0	0	0	0	0.00	0	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	600	600	600	600	600	25.00	15,000	
Spacing	50	0	50	0	0	2,499.95	125,000	
Pruning	0	0	50	0	50	0.00	0	
Fertilizing	500	500	500	500	500	300.00	150,000	
Other stand tending activities	0	0	0	0	0	0.00	0	
Totals hectares	1150	1100	1200	1100	1150	252.17	290,000	
Planning and prescriptions							15,000	
Studies funding							10000	1
Total dollars							315,000	

1/4/2006

TFL 45 Port McNeill
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	
Impeded areas								
Surveys	150	100	50	50	0	40.00	6000	1
Brushing	150	200	50	50	0	1,300.00	195000	1
Density spacing	30	0	0	0	0	2,500.00	75000	1
Totals hectares	330	300	100	100	0	836.36	276,000	
Prescriptions and planning dollars							8,000	1
Total impeded areas							284,000	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	150	100	50	50	0	40.00	6000	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	150	200	50	50	0	1,299.98	195000	
Density spacing	30	0	0	0	0	2,499.92	75000	
Totals hectares	330	300	100	100	0	836.33	276000	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							8,000	
Recommended studies							0	
Total backlog program							284,000	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

1/4/2006

TFL 45 Port McNeill
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.77	0	0	0	2.9	0.41	0.25	0	0.46	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	
Provincial factors for estimated value gain at harvest							5-15%	15-30%	1-5%	
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	**Nursery Seedling Production**	**Silviculture Surveys**
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	0		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	0		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			600
Total backlog surveys from the backlog table			150
33% of all silviculture surveys			248
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			0
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			200
Estimate of total surveys that will affect timber supply		(A)	200
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			200
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			0
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			0

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity.

TFL 45 Port McNeill
Performance Measures Based on Activities Planned for 2002/2003
Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	0	0	200	0	0	150	80	0	500	930	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	1	3,998	1,300	0	15,000		20,298
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	0	0	20	0	0	392	317	0	90	93	
3.3	Estimated total full time equivalent positions (FTE)	0	0	0	0	0	2	2	0	1	1	5
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											0
5.3	Est. area with secondary v[illegible] provided to biodiversity (ha)											0

TFL 45 Port McNeill
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	1,150	1,100	1,200	1,100	1,150	252	290,000
Planning, prescriptions and seedlings							25,000
Backlog Program Field Activities	330	300	100	100	0	836	276,000
Planning, prescriptions and seedlings							8,000
Totals	1,480	1,400	1,300	1,200	1,150		599,000

Performance Measures

Potential total merchentable volume increment in 65 years	20,298 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	5 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	0 ha
Estimated area with secondary value provided to biodiversity	0 ha

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): TFL 45 P. McNeill

Stand Tending	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)**
Surveys	600	600	0.0	1	2	33	25	-24.2	IFP more aggressive on cost per ha for aerial fertilization surveys
Spacing	50	50	0.0	1	1	1980	2500	26.3	Cost per Ha, IFP realizes red circle crew can't space for less than $2500/Ha in remote locations
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Fertilizing	500	500	0.0	2	2	330	300	-9.1	Cost per Ha, IFP thinks cost will be $300/Ha
Forest Health	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)**
Spacing	0	0	#DIV/0!	0	0	1980	n/a	#VALUE!	
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Habitat Supply/ Biodiversity									
Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	
Non-Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): **TFL 45 P. McNeill**

	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Legal Obligation									
Surveys	70	0	-100	0	0	33	n/a	#VALUE!	Large slide occurred in TFL within appraisal areas. Survey for this area was proposed but MoF deemed it ineligible as FRBC project
Site preparation	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
B/L Reforestation									
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site Prep	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
	Last Year's 2002/2003 ha	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)**
Impeded									
Surveys	75	150	100	1	1	33	40	21.2	IFP has become aware of greater B&W problems within TFL. Increased cost equals FRBC's new cost allowances
brushing	0	150	#DIV/0!	0	1	1155	1300	12.6	IFP feels that it can not brush with a red circled crew for $1155/Ha in remote locations
Site Resoration									
Fill planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Rehab	0	0	#DIV/0!	0	0	2200	n/a	#VALUE!	
Reforestation	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	

Evaluation Rating of TFL 45 Sustainable Harvest RMP

Category	yes	partly	no	Rating (H, M, L)
Submitted by June 27 (TFL) or July 16 (TSA).	✓			H
Basic data for TFL provided, area, current AAC, current harvest forecast, site/age class species profile. Long Run Sustainable Yield stated.			✓	L
History of past treatments provided.			✓	L
Text submitted identifying backlog and enhanced forestry program issues.	✓			H
Opportunities to increase timber supply addressed in text, e.g. short/mid/long-term, timber flow benefits. Consistent with Type 1 or 2 Analysis.	✓			H
Opportunities to increase timber value addressed in text, if none so stated. Consistent with Type 1 or 2 Analysis.	✓			H
Opportunities to increase habitat supply/biodiversity addressed in text, if none so stated. Consistent with Type 1 or 2 Analysis.			✓	N/A
Working targets proposed for volume/value/habitat.	✓			H
Satisfactory treatment regime table provided.	✓			H
Satisfactory rationale provided for the priority ranking of activities i.e. link to MP ,TSR, other . Consistent with Type 1 or 2 Analysis.	✓			H
Where habitat supply/biodiversity activity indicated, rationale on why the silviculture treatment specifically maintains the non-timber values.			✓	N/A
All summary tables submitted satisfactorily.	✓			H
Projected job outcome of proposed program stated.	✓			H (# jobs in tables)
Opportunities to achieve FRBC performance goals	✓			H
Is program within reasonable range of last year's SH RMP projections for year 2002/03.		✓		M
Plan Comparison Table submitted with explanation for variations.	✓			H
Performance measures, where TFL used local factors supporting rationale provided.		✓		M
SH study form completed satisfactorily	✓			M
Communication log documents partnership group and stakeholder discussions and issues.			✓	N/A
Other (describe) Text on submitted disc			✓	N/A
Overall rating	n/a	n/a	n/a	H

Appendix V

TFL Forest Ltd RMP Submission

- Executive Summary
- RMP SH Strategic Objectives
- Silviculture History TFL 47 Block 17 Beaver Cove
- Treatment Activity Priorities for TFL 47
- Sustainable Harvest Data Template Tables
- Enhanced Forestry Table
- Backlog Table
- Performance Measures Table
- Management Unit Summary
- Plan Comparison Table
- Studies Forms (3)
- Communication Log
- Licensee Submission Evaluation Form

Executive Summary

The objective of this Strategy is to identify, analyze, prioritize and schedule incremental silvicultural activities that will have a positive influence on the future quality and quantity of habitat and timber supply within Tree Farm Licence No. 47 (TFL 47). TFL 47 is under the management of TFL Forest Ltd. (TimberWest). David Elstone of EBA Engineering Consultants Ltd. (EBA), led a workshop session on October 27, 2000, to present and discuss various silviculture regimes and treatments with representatives from the Ministry of Forests (MoF), the Ministry of Environment, Lands and Parks (MELP) and TimberWest. Strategies were presented and discussed within the context of Tree Farm Licence No. 47, Draft Management Plan No. 3, for January 1, 2001 – December 31, 2005, and its associated Appendices and Information Reports.

The workshop session resulted in an understanding of which silviculture treatments TimberWest would likely pursue through Forest Renewal BC (FRBC) funding. Proposed silviculture treatments were ranked in order of interest by TimberWest. EBA incorporated the results of the workshop session into a draft document and added forecasts of future effects to harvest quality and quantity, funding requirements and employment yields.

Silvicultural activities discussed in the Strategy will only proceed with funding from FRBC or other similar programs.

TFL 47 consists of three management units (MU) on Vancouver Island, the mainland and the Queen Charlotte Islands: Johnstone Straits, Bonanza Lake and Moresby Island. The Type 1 Silviculture Strategy includes only the Johnstone Straits and Bonanza Lake management units. For the purpose of the Strategy, the Johnstone Straits and Bonanza Lake portions of TFL 47 will henceforth be collectively referred to as TFL 47.

TFL 47 is in two Ministry of Forests forest districts: Campbell River and Port McNeill.

Access to the forests of the Johnstone Strait MU is by air or water. The Bonanza Lake MU is easily accessible from Highway 19 from its western and northern boundaries.

The timber supply analysis for the Johnstone Strait MU shows the base case scenario equal to the long-term sustainable harvest. A 'fall down' is not expected for the Johnstone Strait MU due to a long history of timber harvesting which has resulted in the progressive re-distribution of stand age classes.

The Bonanza Lake MU has a forecasted timber supply 'fall-down'; however, it is expected that the fall-down will be not be significant due to a step down progression in harvest levels to the long term sustainable harvest level.

As discussed at the workshop session, the Johnstone Straits MU has no significant habitat supply issues to be addressed as there are no 'critical' wildlife species to be managed. There are no ungulate winter ranges within the Johnstone Strait MU. Reserves and buffers for streams and the ocean supply much of the important habitat for wildlife species within the Johnstone Strait area.

Habitat supply issues were discussed in limited scope at the workshop for the Bonanza Lake MU. Current efforts for habitat supply are deemed status quo for the short term.

Objectives of the Silviculture Program are paraphrased from TimberWest's Tree Farm Licence No. 47, Draft Management Plan No. 3. Management of timber supply and timber quality will be accomplished through the following objectives:

- To promote forest growth by practicing high quality basic silviculture and by implementing an incremental silviculture program (where funded by external sources).

- To manage age class imbalances by harvesting some second growth stands before they reach culmination of mean annual increment (MAI) provided that the stands are economically viable.

- To maximize the production of high quality sawlogs. TimberWest follows the concept that differentiating future products through strategic investment in conversion facilities is far more prudent than attempting to differentiate the forest resource today for unknown markets of the future. Efforts in stand management are to maximize volume growth to achieve stems 20 to 50 cm in diameter with straight boles, minimal taper and small branches.

- TimberWest has no explicit employment objectives within its Management Plan.

- TimberWest's financial objective is for incremental silviculture activities to provide a positive, acceptable return on investment.

TimberWest's FRBC Silviculture Program's Working Targets are:

- Working Target 1 (Overall) - Most projects to yield a positive return on investment.

- Working Target 2 (Quantity) - Increase yields in the short, medium and long term in direct proportion to area fertilized.

- Working Target 3 (Quantity) - Develop stand structure that allows greater harvest flexibility in the medium and long term.

- Working Target 4 (Quantity) - Increase timber supply by widening the forest product market profile through management of crop species with no previous stand management.

- Working Target 5 (Quality) - Increase proportion of dominant Fd, Cw and Yc in merchantable second growth stands to 10% of volume in medium and long term.

- Working Target 6 (Quality) - Manage for wood quality attributes including small knot sizes and low bole taper.

- Working Target 7 (Habitat) - Promote the survival of white pine in reforested stands of the Johnstone Strait MU by preventing the spread of white pine blister rust, through pruning of lower branches.

- Working Target 8 (Habitat) - Assess pre-1994 logged riparian areas in terms of damaged riparian function and what role silviculture can play in the recovery of the riparian forest ecosystem.

TimberWest ranks late rotation fertilization as its highest priority for FRBC investment. All other FRBC eligible incremental silviculture activities have a medium to low priority.

Hectares (ha) Treated By Activity and Year for Tree Farm Licence No. 47.

Program	*Management Unit*	*Year*	*Aerial Fertilization**	*Manual Fertilization**	*Spacing*	*Pruning*	*Total*
Incremental	Johnstone Strait	Subtotal 1-10	6,000	500	400	150	7,050
Incremental	Bonanza Lake	Subtotal 1-10	0	750	500	0	1,250
Incremental	Johnstone Strait + Bonanza Lake	Total 1-10	6,000	1,250	900	150	8,300
Habitat Supply	Johnstone Strait	Subtotal 1-10	-	65	65	3.5	133.5
Habitat Supply	Bonanza Lake	Subtotal 1-10	-	65	65	-	130
Habitat Supply	Johnstone Strait + Bonanza Lake	Total 1-10	-	130	130	3.5	263.5
Incremental + Habitat Supply	Johnstone Strait + Bonanza Lake	Total 1-10	6,000	1,380	1,030	153.5	8,563.5

*Both aerial and manual fertilization treatments include a combination of early and late rotation stands.

Expenditure ($) By Activity and Year for Tree Farm Licence No. 47.

Program	*Management Unit*	*Year*	*Aerial Fertilization**	*Manual Fertilization**	*Spacing*	*Pruning*	*Total*
Incremental	Johnstone Strait	Subtotal 1-10	2,100,000	262,500	560,000	210,000	3,132,500
Incremental	Bonanza Lake	Subtotal 1-10	0	375,000	700,000	0	1,075,000
Incremental	Johnstone Strait + Bonanza Lake	Total 1-10	2,100,000	637,500	1,260,000	210,000	4,207,500
Habitat Supply	Johnstone Strait	Subtotal 1-10	-	34,125	117,000	4,900	156,025
Habitat Supply	Bonanza Lake	Subtotal 1-10	-	34,125	117,000	-	151,125
Habitat Supply	Johnstone Strait + Bonanza Lake	Total 1-10	-	68,250	234,000	4,900	307,150
Incremental + Habitat Supply	Johnstone Strait + Bonanza Lake	Total 1-10	2,100,000	705,750	1,494,000	214,900	4,514,650

*Both aerial and manual fertilization treatments include a combination of early and late rotation stands.

Employment (Person Years[1]) By Activity and Year for Tree Farm Licence No. 47.

Program	*Management Unit*	*Year*	*Aerial Fertilization**	*Manual Fertilization**	*Spacing*	*Pruning*	*Total*
Incremental	Johnstone Strait	Subtotal 1-10	1.30	2.80	6.66	6.60	17.36
Incremental	Bonanza Lake	Subtotal 1-10	0.00	4.17	5.60	0.00	9.77
Incremental	Johnstone Strait + Bonanza Lake	Total 1-10	1.30	6.97	12.26	6.60	27.13
Habitat Supply	Johnstone Strait	Subtotal 1-10	-	0.53	1.43	0.07	2.03
Habitat Supply	Bonanza Lake	Subtotal 1-10	-	0.53	1.43	-	1.96
Habitat Supply	Johnstone Strait + Bonanza Lake	Total 1-10	-	1.06	2.86	0.07	3.99
Incremental + Habitat Supply	Johnstone Strait + Bonanza Lake	Total 1-10	1.30	8.03	15.12	6.67	31.12

*Both aerial and manual fertilization treatments include a combination of early and late rotation stands.

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[1] Note: Assumes 180 days of silviculture work = 1 job (Source: Strathcona TSA, Incremental Silviculture Strategy (Interim) using the Source: Jobs and Timber Accord)

TFL Forest Ltd. - FRBC MYA CON 0001069 PAM 02605

RESOURCE MANAGEMENT PLAN

SUSTAINABLE HARVEST STRATEGIC OBJECTIVE

TREE FARM LICENCE NO. 47

(Bonanza Lake Management Unit and portion of the Johnstone Strait Management Unit within the Port McNeill Forest District)

2002/2003 to 2006/2007

This document and the attached tables recommend sustainable harvest activities in the portion of Tree Farm Licence No. 47 (TFL 47) located within the Ministry of Forests Port McNeill Forest District to support the Forest Renewal BC (FRBC) Sustainable Harvest Strategic Objective.

TFL 47 is managed by TFL Forest Ltd (TimberWest).

Areas within the Port McNeill Forest District's Timber Supply Area, within or adjacent to areas where TimberWest operates, are not included in this plan.

The 2001/2002 Resource Management Plan (RMP) for TFL 47 was revised by TimberWest's foresters to produce this plan.

Despite increasing site-specific knowledge, a majority of backlog, enhanced and forest health treatment areas were not identified on the ground at the time this RMP was prepared. It is expected that strategic planning and field surveys being done in 2001/2002 will identify most treatment areas for 2002/2003 and a majority of the areas to be treated in subsequent years. This expectation meets the 2001/2002 FRBC Business Rule for the Sustainable Harvest program to prepare prescriptions for work in the current and following year.

General biodiversity/habitat supply plans and plans for rare, endangered or regionally significant species are not expected to be completed in 2001 however this initiative remains a priority. Planning for treatments will be initiated when the Interim Habitat Silviculture Strategy, Pacific Region RMP 2002/03 has been finalized.

REFERENCES AND ANALYSES

This plan is based on TimberWest's Tree Farm Licence No . 47, Type 1 Silviculture Strategy, March 28, 2001. Supporting data, discussions on constraints to timber supply, investment rationale and references are contained within this Silviculture Strategy. An executive summary of the Strategy is attached and forms an integral part of this RMP submission.

Please note that the portions of TFL 47 which include Hanson, West Cracroft and East Cracroft Islands (Blocks 1-3), are included in the area administered by the Port McNeill Forest District but are regarded as part of the Johnstone Straits Management Unit. A timber supply analysis was not redone to conform to Forest District boundaries for this RMP. Proposed activities on these islands are included in this RMP.

Version 3.0 Interim Habitat Silviculture Strategy – June 8, 2001, Pacific Region RMP 2002/03 was used as a guide in planning habitat related Sustainable Harvest activities within TFL 47.

DESCRIPTION OF THE BONANZA LAKE MANAGEMENT UNIT (Block 17)

Management Unit Description and Basic Data

Please refer to the TFL 47 Type 1 Silviculture Strategy for a detailed description of the Bonanza Lake Management Unit including species composition, site class and age class distributions.

Silviculture History

Please refer to Appendix I of the TFL 47 Type 1 Silviculture Strategy.

Harvest Forecast

The 2000 harvest forecast projects a long term harvest rate of about 169,000 cubic meters. A majority of this harvest will be from second growth stands. Please refer to the TFL 47 Type 1 Silviculture Strategy for details of proposed AAC and timber supply analysis discussions.

Current NSR Status

There are minimal amounts of pre-1987 backlog non-sufficiently restocked (NSR) areas scattered throughout the Bonanza Lake Management Unit with locations unknown.

DESCRIPTION OF THE JOHNSTONE STRAITS MANAGEMENT UNIT (Blocks 1-12)

Management Unit Description and Basic Data

Please refer to the TFL 47 Type 1 Silviculture Strategy for a detailed description of the Johnstone Strait Management Unit including species composition, site class and age class distributions.

Silviculture History

Refer to Appendix I of the TFL 47 Type 1 Silviculture Strategy.

Harvest Forecast (entire Johnstone Straits Management Unit)

The 2000 harvest forecast projects a long-term harvest rate of about 525,000 cubic meters. Most of this harvest will be from second growth stands. Refer to the TFL 47 Type 1 Silviculture Strategy for details of proposed AAC and timber supply analysis discussions.

Current NSR Status

There is a minimal amount of pre-1987 backlog non-sufficiently restocked (NSR) area within the Johnstone Strait Management Unit. Most of these areas are considered to be of poor site quality (rocky/salal). Existing sites are not deemed worthy of treatment due to the large amount of investment required to reach sufficiently re-stocked (SR) status (i.e. high access costs) and low expected growth rates.

RECOMMENDED PROGRAM

Objective: Return on investment

Highest priority is given to silvicultural investments that generate a positive financial return.

Planned activities:

1. Aerial fertilization of Fd stands on West and East Cracroft Islands at various stage of the harvest rotation. Treatments are planned for 2001/2002; however, should this application be delayed, consider for treatment in 2002/2003.

2. Manual fertilization of Western red cedar (Cw), Yellow cedar (Yc) or Douglas fir (Fd). Preference will be given to stands spaced. Candidate stands will be identified during 2001/2002. During years 2002 to 2006, fertilize an estimated 50-100 hectares per year will be treated. This plan provides for all fertilization to be applied manually, as the size of the program precludes the use of aerial applications.

3. Reforestation of deactivated roads and landings under the EEV Program. Reforestation would be done with the objective of reducing the 'clearcut equivalent area.' Candidate areas will be identified in 2001/2002. Planting may begin in 2002/2003.

4. Additional treatments with positive financial return will be incorporated into the plan when (if) identified.

Objective: Product (market) diversity

Planned activities:

5. Increasing the proportion of large-diameter dominant Fd, Cw and Yc at next harvest in dense stands of Western hemlock (Hw) through spacing/ species manipulation treatments. Treatment of only target species rather than treatment of the entire stand will be evaluated for financial feasibility. Initial candidate stands were identified in 2000/01. An estimated 50-100 hectares per year will be treated.

Objective: Habitat Supply – various reqimes

Ungulate Winter Ranges are confirmed in the timber supply analysis for Tree Farm Licence Management Plan No. 3.

Planned activities:

6. Ungulate winter ranges and riparian areas will be assessed for enhancement of habitat conditions. Both of these habitat conditions are synonymous with the areas available in the Bonanza Lake Management Unit. Suitable candidate areas are limited. Overview assessments for riparian areas to be done in 2002/2003.

7. Stand management treatments (spacing, fertilization and possibly pruning) to encourage the development of desired habitat conditions. This is applicable only where this will allow an increase in financially attractive harvesting opportunities. Suitable candidate areas are limited. Treatment may begin as soon as 2002/2003.

Objective: Community Forestry Program (COMFOR)

This program garners community support for the local forest industry as well as supporting/motivating future forest workers prior to commencement of advanced training.

Planned activities:

8. A mix of activities - all selected to have investment or other merit. Planned for 2000 and all subsequent years. It is anticipated that the current compliment of two crews will be maintained in 2002/2003. It should be noted that the costs associated with this program, which are shown on the attached Enhance Forestry table as "Other" under Stand Tending, are associated with

an output unit estimate of 87.5 hectares per year. This estimate is entirely arbitrary as this program is used as a training initiative.

Studies

There are three studies are proposed:

1. Document worker production, treatment design and costs of alternative spacing-like treatment to enhance presence of Fd, Cw and Yc in second growth harvests. $5000 to establish and if need be $4,000 to assess two years after establishment. Please refer to the attached Study Outline.

2. Explore various techniques to prevent and/or mitigate ungulate (Roosevelt elk and Black-tail deer) browse, trampling and rubbing of young crop trees. As the Beaver Cove Operation moves to a harvest profile of second growth, that is predominantly located in the lower elevations of the Bonanza watershed, browse damage to young plantations is expected to increase. Please refer to the attached Study Outline.

3. Conduct overview assessments (i.e. Riparian Vegetation Assessments) in the Bonanza and Kokish watersheds for the enhancement of riparian ecosystem values. Please refer to the attached Study Outline.

Working Targets

1. Increase yields in short, medium and long term for areas fertilized and rehabilitated. All projects to yield a positive return on investment.

2. Increase proportion of dominant Fd, Cw and Yc in merchantable second growth stands.

3. Develop stand structures that allow greater harvest flexibility in the medium and long term to support landscape, biodiversity, identified wildlife, recreation, and water quality objectives.

ADDITIONAL REQUIRED RMP TABLES

Please find attached the additional required information that forms part of this RMP submission:

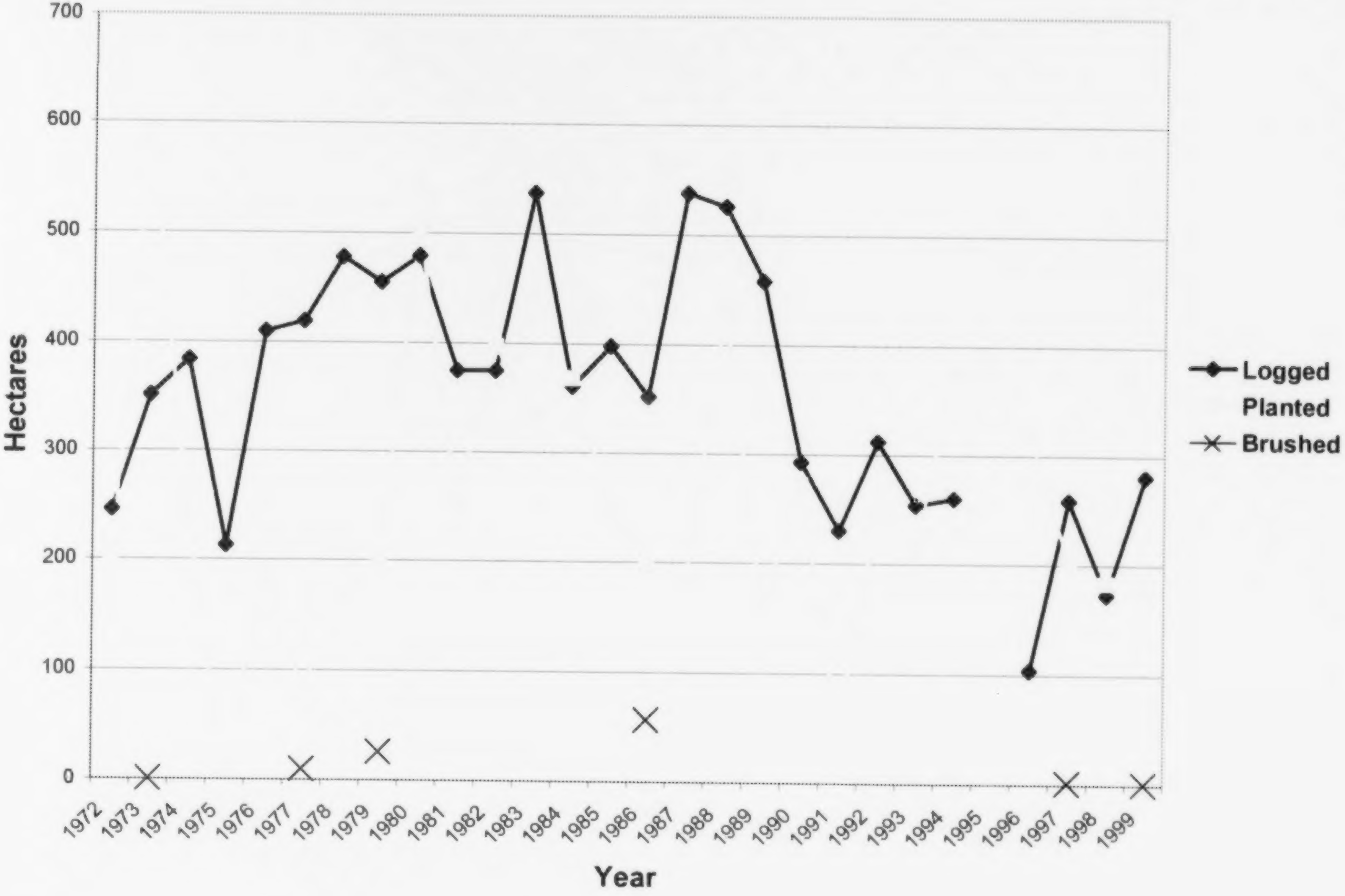
- Silviculture Treatment Regime Summary Table (*Table 9* of the TFL 47, Silviculture Strategy).
- Program Tables;
- Performance Measure Tables;
- Management Unit Summary Table;
- Table A Program Comparison Tables; and,

- Communication Log

This RMP submission was prepared by David Elstone, RPF, of EBA Engineering Consultants Ltd. Should the reader have any questions about this RMP, please contact Mr. Elstone by phone at 604-740-8094 or by email at delstone@eba.ca.

SILVICULTURE HISTORY
TFL 47 Block 17 - Beaver Cove

Year	Logged	Planted	Fert	Juvenile Spaced	Pruned	Fires	Site Preparation	Brushed
1972	246	207						
1973	351	590		15			11	1
1974	384	237						
1975	213	9		58				
1976	410	190		206				
1977	419	82		152				10
1978	478	166		253				
1979	455	204		331				26
1980	479	504		353				
1981	375	253		316				
1982	375	397		280				
1983	537	332		128			297	
1984	361	368					209	
1985	398	248		100			6	
1986	352	197		86				57
1987	538	184		268				
1988	526	429		41			57	
1989	458	159		390		7		
1990	293	272		250				
1991	230	52		119				
1992	312	242		43				
1993	254	215		70				
1994	260	378		276	6			
1995								
1996	104	318		247	10	11		
1997	259	203		128	5			2
1998	173	183				24	2	
1999	281	180	279	60			7	1
Total	9521	6799	279	4170	21	42	589	97
Average	340	243	10	149	1	2	21	3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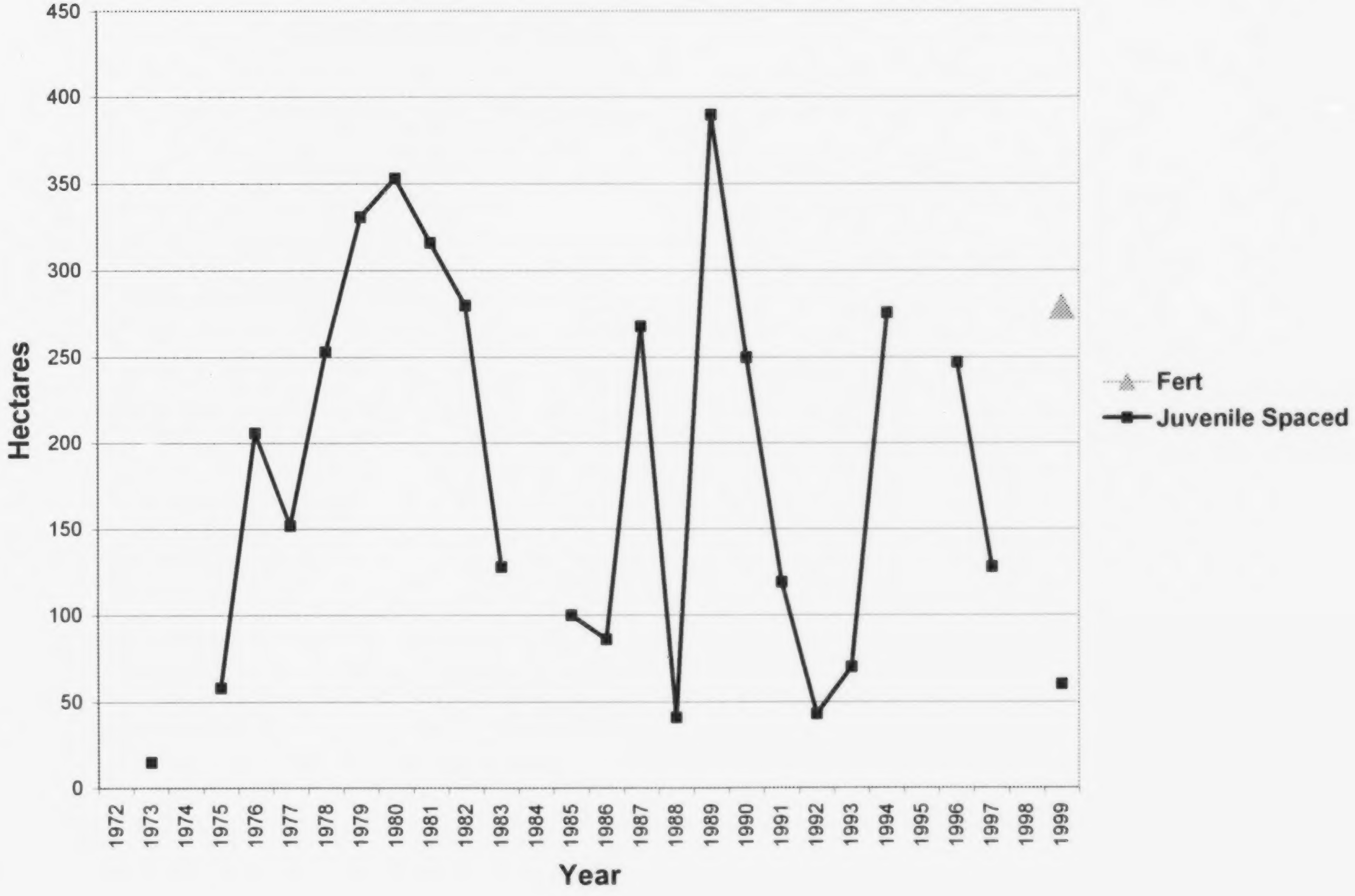
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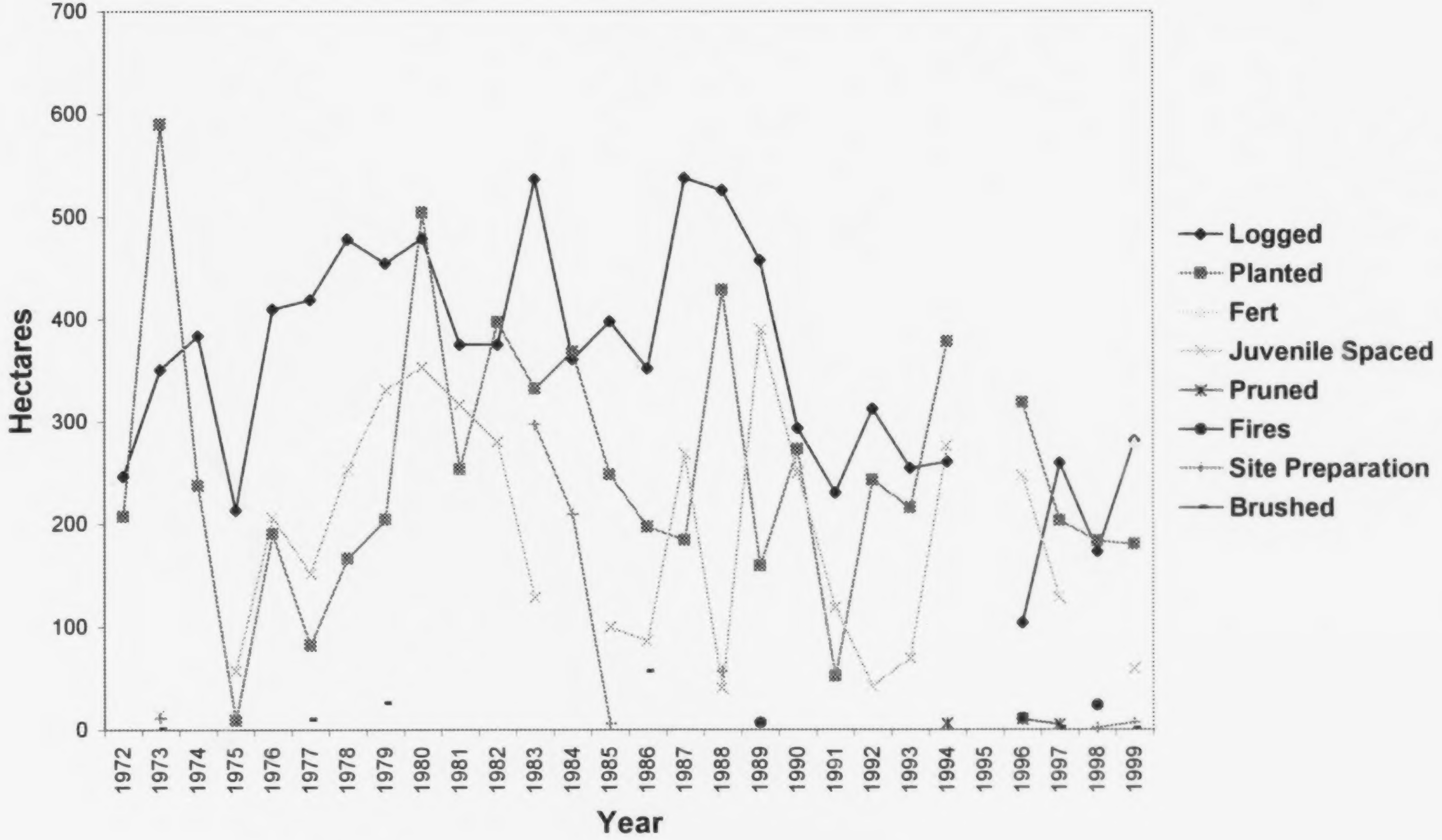
Silviculture History in Beaver Cove

Table 9. Treatment Activity Priorities for Tree Farm Licence No. 47.

Regime	Rank (#) Priority (L, M, H)		Strategy	Opportunity Area (ha/year)	Timber Supply Effects			Quality	Habitat[1]			Direct[2] Silvic. Jobs (Days/ha)	Direct[3] Cost ($/ha)
	JS	BL			Short	Medium	Long		OG	Riparian	Wildlife		
1. High quality basic silviculture	1	1	MT1, QMT1	All harvested stands	0	+	+	+	+	+	+	N/a	N/a
Rapid and adequate reforestation	H	H		(Non-FRBC eligible)									
Vegetation management													
2 Tree Improvement	2 H	2 H	MT2,QMT2	All harvested stands (Non-FRBC eligible)	0	+	+	+	+	+	+	N/a	N/a
Fertilization													
3. Late rotation Fd stand fertilization	3	3											
Aerial fertilization – **JS**	H	H	ST2, QST1	100	+	+	+	+	+	0(+)[4]	+	0.04	350
Aerial fertilization – **BL**			ST2, QST1	0	+	+	+	+	+	0(+)[18]	+	0.04	300
Manual fertilization – **JS**			ST2, QST1	50	+	+	+	+	+	0(+)[18]	+	1.00	525
Manual fertilization – **BL**			ST2, QST1	0	+	+	+	+	+	0(+)[18]	+	1.00	500
4. Multiple-stand entry fertilization	4	4											
Aerial fertilization – **JS** (Fd, Cw, Yc)	M	M	MT3	500	0	+	+	0	+	0(+)[18]	+	0.04	350
Manual fertilization – **BL** (Cw, Yc)[5]			MT3	50	0	+	+	0	+	0(+)[18]	+	1.00	500
Stand tending													
5. Promotion of valuable crop species	5	5											
Spacing – **JS** (Fd)	L	L	QMT3	25	0	0	0	+	+	+	+	3.00	1400
Spacing – **BL** (Cw, Yc)			QMT3	50	0	0	0	+	+	+	+	2.00	1400
Manual fertilization – **JS** (Fd)			QMT3	0	0	0	0	+	+	+	+	0.00	0
Manual fertilization – **BL** (Cw, Yc)			QMT3	50	0	0	0	+	+	+	+	1.0	500
6. Stand density control of red alder	6	N/a											
Spacing – **JS** (Dr)	L		MT4, QMT5	0-5	0	+	+	+	0	0	0	3.00	1400
Pruning – **JS**			MT4, QMT5	0-5	0	+	+	+	0	0	0	8.00	1400

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[1] It is generally accepted that any treatment on the landscape that promotes diversity in landscape attributes will promote biodiversity.
[2] Estimates for productivity and costs for many of the treatments listed are based on limited or no previous experience within TFL 47. Future analyses will require this information which should be collected from operational trials.
[3] Costs for the same treatment within the same management unit may differ depending on if the activity is coupled with one or more other type of activities.
[4] It is expected that treatments will not take place within riparian reserve zones (unless intentionally prescribed for non-timber management objective), but may occur within the riparian management zones as defined by the Forest Practices Code.
[5] The first stand entry for manual fertilization in stands of **BL** may be done concurrently with a spacing treatment under an overall treatment regime for promoting valuable crop species.

Table 9. Continued.

Regime	Rank (#) Priority (L, M, H)		Strategy	Opportunity Area (ha/year)	Timber Supply Effects			Quality	Habitat[6]			Direct[7] Silvic. Jobs (Days/ha)	Direct[7,8] Cost ($/ha)
	JS	BL			Short	Medium	Long		OG	Riparian	Wildlife		
7. White pine management	8	N/a											
Pruning – **JS**	L		HLT1	0.5	0	0	0	0	+	0	0	4.00	1400
8. Riparian stand tending	9	7											
Spacing – **JS**	L	L	HLT2	10	0	0	0	0	+	+	+	4.00	1800
Spacing - **BL**			HLT2	10	0	0	0	0	+	+	+	4.00	1800
Manual fertilization – **JS**			HLT2	10	0	0	0	0	+	+	+	1.50	525
Manual fertilization – **BL**			HLT2	10	0	0	0	0	+	+	+	1.50	525

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[6] It is generally accepted that any treatment on the landscape that promotes diversity in landscape attributes will promote biodiversity.

[7] Estimates for productivity and costs for many of the treatments listed are based on limited or no previous experience within TFL 47. Future analyses will require this information which should be collected from operational trials

[8] Costs for the same treatment within the same management unit may differ depending on if the activity is coupled with one or more other type of activities.

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at
http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** Tree Farm Licence No. 47 - Portion in the Port McNeill Forest Dis

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

Tree Farm Licence No. 47 - Portion in the Port McNeill Forest District
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Stand Tending

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	135	135	135	135	135	33.00	4455	1
Spacing	85	75	75	75	75	1800.00	153000	2
Pruning	0	0	0	0	0	0.00	0	
Fertilizing	50	50	50	50	50	500.00	25000	1
Other	88	88	88	88	88	857.14	75,000	2
Totals hectares	358	348	348	348	348	720.15	257,455	
Planning and prescriptions							20,000	1
Total dollars							277,455	

Forest Health Enhancement

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Riparian treatments	5	5	5	0	0	3,000.00	15000	2
Non-riparian treatments	20	5	5	0	0	3,000.00	60000	2
Totals hectares	25	10	10	0	0	3,000.00	75,000	

Domestic Range

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	135	135	135	135	135	33.00	4,455	
Spacing	85	75	75	75	75	1,799.98	153,000	
Pruning	0	0	0	0	0	0.00	0	
Fertilizing	50	50	50	50	50	500.00	25,000	
Other stand tending activities	113	98	98	88	88	1,333.31	150000	
Totals hectares	383	260	260	260	260	869.15	332,455	
Planning and prescriptions							20,000	
Studies funding							22000	1
Total dollars							374,455	

1/4/2006

Tree Farm Licence No. 47 - Portion in the Port McNeill Forest District
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	5	5	5	5	5	1,320.00	6600	2
Totals hectares	5	5	5	5	5	1,319.47	6,600	
Seed purchase	5,000	5000	5000	5000	5000	0.67	3,350	2
Prescriptions and planning dollars							1,800	2
Total site restoration							11,750	
Backlog Program Activities - Management Unit Total								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	5	5	5	5	5	1,319.21	6600	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	5	5	5	5	5	1,316.31	6600	
Seed purchase	5000	5000	5000	5000	5000	0.67	3350	
Prescriptions and planning							1,800	
Recommended studies							0	
Total backlog program							11,750	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Tree Farm Licence No. 47 - Portion in the Port McNeill Forest District
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on Tree Farm Licence No. 47, Type 1 Silviculture Strategy and Provincial Default Factors

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.77	0	0	0	2.9	0.41	0.25	0	0.46	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	
Provincial factors for estimated value gain at harvest							5-15%	15-30%	1-5%	
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area: Tree Improvement	Area: Nursery Seedling Production	Area: Silviculture Surveys
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	5		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	5		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			135
Total backlog surveys from the backlog table.			0
33% of all silviculture surveys			45
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply			(A) 0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			45
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			0
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			0

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity. 25

Tree Farm Licence No. 47 - Portion in the Port McNeill Forest District
Performance Measures Based on Activities Planned for 2002/2003
Based on Tree Farm Licence No. 47, Type 1 Silviculture Strategy and Provincial Default Factors

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	5	0	45	0	5	0	85	0	50	302	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	956	0	1,381	0	1,500		3,837
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	1	0	4	0	10	0	337	0	9	30	
3.3	Estimated total full time equivalent positions (FTE)	0	0	0	0	0	0	2	0	0	0	2
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											25
5.3	Est. area with secondary value provided to biodiversity (ha)											25

Tree Farm Licence No. 47 - Portion in the Port McNeill Forest District
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	383	260	260	260	260	869	332,455
Planning, prescriptions and seedlings							42,000
Backlog Program Field Activities	5	5	5	5	5	1,316	6,600
Planning, prescriptions and seedlings							5,150
Totals	388	265	265	265	265		386,205

Performance Measures

Potential total merchentable volume increment in 65 years	3,837 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	2 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	25 ha
Estimated area with secondary value provided to biodiversity	25 ha

Table 4: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): 47 Portion in the Port McNeill Forest District

Stand Tending	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (include separate attachment if more space necessary with reference #)**
Surveys	120	135	12.5	1	1	33	33	0.0	
Spacing	100	85	-15.0	2	2	1980	1800	-9.1	
Pruning	0	n/a	########	0	0	2420	n/a	#VALUE!	
Fertilizing	50	50	0.0	1	1	330	500	51.5	Method of fertilization application will be manual Anticipate costs to be around $500 per hectare

Forest Health	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (include separate attachment if more space necessary with reference.#)**
Spacing	0	n/a	########	0	0	1980	n/a	#VALUE!	
Pruning	0	n/a	########	0	0	2420	n/a	#VALUE!	
Habitat Supply/ Biodiversity									
Riparian	0	5	#DIV/0!	0	2	3000	3000	0.0	TimberWest's interest in riparian stand management has increased over last year
Non-Riparian	20	20	0.0	2	2	3000	3000	0.0	

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): 47 Portion in the Port McNeill Forest District

	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Legal Obligation									
Surveys	0	n/a	#VALUE!	0	0	33	n/a	#VALUE!	
Site preparation	0	n/a	#VALUE!	0	0	1650	n/a	#VALUE!	
Planting	0	n/a	#VALUE!	0	0	1320	n/a	#VALUE!	
Brushing	0	n/a	#VALUE!	0	0	1155	n/a	#VALUE!	
B/L Reforestation									
Surveys	100	n/a	#VALUE!	2	0	33	n/a	#VALUE!	For Surveys, Site Preparation and Planting: Treatments were proposed for small localized sites with locations unidentified
Site Prep	5	n/a	#VALUE!	2	0	1650	n/a	#VALUE!	No opportunities were identified and it is now thought that costs of such treatments are prohibited to a return on investment
Planting	5	n/a	#VALUE!	2	0	1320	n/a	#VALUE!	
Brushing	0	n/a	#VALUE!	0	0	1155	n/a	#VALUE!	
Impeded	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)**
Surveys	900	n/a	#VALUE!	1	0	33	n/a	#VALUE!	For both Surveys and Brushing. It is assumed that there are only minimal amounts of backlog non-free growing sites scattered throughout TFL 47 with locations unknown
brushing	10	n/a	#VALUE!	1	0	1155	n/a	#VALUE!	
Site Resoration									
Fill planting	0	n/a	#VALUE!	0	0	1320	n/a	#VALUE!	
Rehab	0	n/a	#VALUE!	0	0	2200	n/a	#VALUE!	
Reforestation	0	5	#DIV/0!	0	2	1320	1320	0.0	Planting of deactivated roads and landings conducted under the EEV program.

TFL 47, Portion in the Port McNeill Forest District, Sustainable Harvest RMP 2002/2003 Riparian Habitat Overview Assessment Proposal

STUDY Outline

Short Description of Study	Overview assessment or 'opportunity analyses' of the Bonanza Lake and Kokish watersheds within the Bonanza Lake Management Unit to determine what opportunities exist to enhance riparian biodiversity and habitat through enhanced silviculture activities.
Background / Justification	TimberWest wishes to explore areas within the Bonanza Lake Management Unit where stand management may be done to enhance the development of old growth characteristics (such as large woody debris) in riparian zones.
Methods & Procedures	Overview/ reconnaissance type assessments would be done to determine riparian condition. Assessments may follow the procedures outlined in the Watershed Restoration Technical Circular No. 6, Riparian Assessment and Prescription Procedures (RAPP). Tools that may be used to assist in the assessments would be terrain ecosystem mapping, (TEM), aerial photography and helicopter overview flights. A finalized Habitat Silviculture Strategy for the Pacific Region may identify specific watersheds to explore.
Lead Contact for Study	TFL Forest Ltd., the agency that replaces the Ministry of Environment, Lands and Parks and the Ministry of Forests
Key partners affected by this issue	N/a
Temporal Scale of importance (how urgent is this?)	Medium to Long term effects
Spatial Scale (small vs wide reaching impacts)	Assessments to be conducted on a watershed basis.
Link to Resource Management Plans, Timber Supply Review, higher level plans	-TFL 47 (portion within the Port McNeill Forest District) RMP 2002/2003. -Interim Habitat Silviculture Strategy, June 8, 2001. -TFL 47 Type 1 Silviculture Strategy, March 28, 2001.

Strategic Objectives: (tick all that apply)	**SH**[1]	**EEV**	**SSFM**	**C&I**	**VA**[2]	**WF**
	X					

Region: Vancouver **Study (Y/N): N**

New Project for 2002/03 (Y/N): Y

Proponent: TFL Forest Ltd.

Number of years to complete: 1

Mgmt. Unit: TFL 47, Bonanza Lake Management Unit

$ to Complete $10,000 (est.)

Workplan #: PAM 02605

Activity Location #: N/A

---

[1] SH = Sustainable Harvest EEV = Enhance Environmental Values SSFM = Strengthen Sustainable Forest Management C&I = Criteria and Indicators of Sustainability VA = Value Added CO = Communities WF = Workforce

[2] We will include needs for these strategic objectives if identified but will not ask specifically for these needs.

TFL 47, Portion in the Port McNeill Forest District, Sustainable Harvest RMP 2002/2003
Species Manipulation Operational Trial Proposal

STUDY Outline

Short Description of Study	To observe alternative stand management techniques other than regular juvenile spacing to increase proportion of Fd, Yc and Cw in second growth stands
Background / Justification	Regular density management spacing reduces stand volume and may often eliminate the best crop trees in terms of size and valuable species. Conventional spacing treatments prescribed for management of desired species compositions still require the spacers to treat every square meter of a hectare and thus have a relatively high treatment cost. A new technique has been designed where the spacers are given specifications to treat only a certain single or group of desired species and to avoid treating areas where the target species(s) is not present in the stand. This new technique has its merits within Hw dominated stands where Cw, Yc and Fd make up a minor component. Although the entire hectare has to be walked, the entire hectare may not have to be treated and thus treatment costs are expected to be lower then conventional spacing.
Methods & Procedures	Operational trials testing worker production, treatment design and costs.
Lead Contact for Study	TFL Forest Ltd. and the Ministry of Forests
Key partners affected by this issue	Forest licensees.
Temporal Scale of importance (how urgent is this?)	Urgent as implementation of this type of treatment has already begun.
Spatial Scale (small vs wide reaching impacts)	On a block by block basis.
Link to Resource Management Plans, Timber Supply Review, higher level plans	-TFL 47 (portion within the Port McNeill Forest District) RMP 2002/2003. -TFL 47, Type 1 Silviculture Strategy

Strategic Objectives: (tick all that apply)	**SH**[1]	**EEV**	**SSFM**	**C&I**	**VA**[2]	**WF**
	X					

Region: Vancouver **Study (Y/N): Y**

New Project for 2002/03 (Y/N): Y

Proponent: TFL Forest Ltd.

Number of years to complete: 1

Mgmt. Unit: TFL 47, Bonanza Lake Management Unit

$ to Complete $5,000 (est.) and $4000 to assess two years after establishment

Workplan #: PAM 02605

Activity Location #: N/A

---

[1] SH = Sustainable Harvest EEV = Enhance Environmental Values SSFM = Strengthen Sustainable Forest Management C&I = Criteria and Indicators of Sustainability VA = Value Added CO = Communities WF = Workforce

[2] We will include needs for these strategic objectives if identified but will not ask specifically for these needs.

TFL 47, Portion in the Port McNeill Forest District, Sustainable Harvest RMP 2002/2003
Ungulate Browse Control Operational Trials Proposal

STUDY Outline

Short Description of Study	To explore various techniques (barriers and browse repellents) for prevention and/or mitigation of ungulate (Roosevelt elk and Black-tail deer) browse, trampling and rubbing of seedlings and saplings in harvested areas.
Background / Justification	Limited documented knowledge available. As TimberWest moves towards a harvest profile of second growth, that is predominantly located in the lower elevations of the Bonanza watershed, ungulate damage to young plantations is expected to increase.
Methods & Procedures	Operational trials using the latest products available for control of ungulate damage – barriers and browse repellents, etc….
Lead Contact for Study	TFL Forest Ltd., the Ministry of Forests, and various product producers/ distributors, research institutions, and other licensees to be identified once study parameters have been defined.
Key partners affected by this issue	Forest licensees on Vancouver Island and the Sunshine Coast (where Roosevelt elk are present).
Temporal Scale of importance (how urgent is this?)	Short term effect – blocks where ungulate damage is anticipated will be harvested next year.
Spatial Scale (small vs wide reaching impacts)	On a block by block basis as set up in a sample population matrix.
Link to Resource Management Plans, Timber Supply Review, higher level plans	-TFL 47 (portion within the Port McNeill Forest District) RMP 2002/2003. -Forest Practices Code – regeneration delay and free growing guidelines.

Strategic Objectives: (tick all that apply)	**SH[1]**	**EEV**	**SSFM**	**C&I**	**VA[2]**	**WF**
	X					

Region: Vancouver **Study (Y/N): Y**

New Project for 2002/03 (Y/N): Y

Proponent: TFL Forest Ltd.

Number of years to complete: 5

Mgmt. Unit: TFL 47, Bonanza Lake Management Unit

$ to Complete: $7,000 for the first year (est.) $18,000 distributed over the remaining four years.

Workplan #: PAM 02605

Activity Location #: N/A

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[1] SH = Sustainable Harvest EEV = Enhance Environmental Values SSFM = Strengthen Sustainable Forest Management C&I = Criteria and Indicators of Sustainability VA = Value Added CO = Communities WF = Workforce

[2] We will include needs for these strategic objectives if identified but will not ask specifically for these needs.

Appendix VI

Western Forest Products Ltd RMP Submission

- FRBC TFL 6 Type I Report (incl. Executive Summary)
- Sustainable Harvest Data Template Tables
- Enhanced Forestry Table
- Backlog Table
- Performance Measures Table
- Management Unit Summary
- Plan Comparison Table
- Licensee Submission Evaluation Form

TFL 6

Incremental Silviculture Strategy

British Columbia
Ministry of Forests

Funded by
Forest Renewal BC

June, 2001

Executive Summary

General Strategy

Policies developed over the last two decades to ensure multi-resource sustainability limit the timber supply in the short to medium-term. Reductions in the amount of old forest available for harvest result in the annual allowable cut (AAC) being stepped down over the next 50 years. In the mid to long term, as more second growth becomes merchantable, the AAC slowly recovers until it reaches a long-term sustainable level higher than the current harvest rate.

The key opportunities for silviculture investments are applying treatments or strategies which minimize constraints on old stands, developing programs for harvesting stands not included in the timber harvesting landbase (THLB) and increasing the number of second growth stands which could be harvested in the 2020 to 2050 "trough".

Past silviculture (basic and intensive) efforts have lessened the effects of the medium-term reduction in the AAC. Many of the treatment options discussed in this report have been included in the Current Management Option (CMO) of the most recent timber supply analysis (TSA). Most of the additional suggested treatments are considered "experimental" and will require further study or research before they can be implemented. As a result funding for these studies is an important priority in the near future.

In the short-term there is an opportunity to harvest some alder which would diversify the log profile recovered from the TFL. In the mid to long-term as the harvest moves to second growth, it is expected that significant components of premium logs will be produced primarily because of the longer rotations which result from harvesting based on achievement of minimum dbh's. As a result of previous and future pruning, some premium logs with clear cuttings will be harvested starting in late mid-term.

The existing second growth inventory is dominated by Hw. There may be opportunities to diversify the species mix used in reforestation which will impact mid to long-term timber quality.

Working Targets

WT1 (Quantity):	In addition to the treatments included in the CMO there are quantified opportunities to increase the short-term AAC by about 10,000 to 12,000 m3 (alder conversion) and the mid-term AAC by about 50,000 m3 (commercial thinning). There are also several treatments which have the potential to further increase the mid to long – term AAC. However, the impacts of these treatments on timber supply have not been quantified.
WT1 (Quality):	Quantified working targets have not been finalized for quality. An interim estimate is that pruning about 350 ha / year to 5 meters in height should yield, starting in the mid – term, >4% of the harvest in premium logs with some clear cuttings

Second Growth Log Product Objectives

Log product quality objectives have not yet been finalized for TFL 6. As a starting point for further discussion the following basic log specifications are suggested.

Quality Class	Species	Characteristics
Premium Log	Hw-Ba, Ss, Fd	50+ cm dbh, with or without pruned 5.5m first log
	Dr	40+ cm dbh, with or without pruned 5.5m first log
Sawlog	All conifers	40+ cm dbh
	Dr	30+ cm dbh

Silviculture Strategies

Strategies to Increase the Quantity of Future Timber Supply

Short Term:	1. Reduce regeneration delay on salal sites by continuing to fertilize at the time of planting. 2. Increase the short-term AAC by harvesting alder.
Mid Term:	1. Reduce the minimum harvest age and thereby increase the AAC in the 2041 to 2060 "trough" by maintaining or increasing current spacing levels and modifying residual densities and/or, if viable, starting an "Early" commercial thinning program. 2. If commercial thinning can be proved to be viable, a program starting in about 2030 could be used to increase the AAC in the 2041 to 2060 "trough." 3. Increase the AAC in the 2041 to 2060 "trough" by looking at establishing alder plantations on ecologically-suitable currently harvested areas. 4. If non-SCHIRP fertilization response can be demonstrated, the mid-term AAC could be significantly increased by fertilization.
Long term:	1. Increase long-term AAC by continuing to aggressively fertilize and monitor treatment response under SCHIRP. 2. Reduce long-term minimum harvest ages by continuing to use genetically improved seed. 3. Increase the long-term AAC with an aggressive road rehabilitation program. 4. Increase the long-term AAC by converting un-managed alder-leading stands to managed coniferous stands. 5. Increase the long-term AAC by draining wet, low productivity sites.

Strategies to Increase the Quality of Future Timber Supply

Short Term:	1. Increase product diversification by harvesting alder.
Mid Term:	1. Increase mid-term clear recovery by continuing or increasing the current pruning program. 2. Improve mid-term sawlog quality by continuing or increasing current juvenile spacing levels and/or, if viable, starting an "Early" commercial thinning program. 3. If commercial thinning can be proved to be viable, a program starting in about 2030 could be used to increase the quality of the final harvest. 4. Increase product diversification and recover logs with some clear cuttings by growing alder.
Long Term:	1. Diversification / refinement of the species mixes used in reforestation can be used to diversify the mix of species harvested in the long-term.

Strategies to Increase the Quantity or Quality of Future Habitat Supply

Long Term:	1. Density management and conversion of alder-leading stands in riparian management zones to mixed to deciduous-coniferous stands will improve long-term fish and riparian habitat.

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Introduction

About the Interim Strategy

The terms of a service agreement between Forest Renewal BC (FRBC) and the BC Ministry of Forests (MoF) require the MoF to develop, and FRBC to fund, what is essentially an incremental silviculture strategy. This document addresses this contractual requirement for Tree Farm License (TFL) 6 which is held by Western Forest Products Limited (WFP).

Incremental silviculture is part of a suite of strategies, which together may influence the future quality and quantity of habitat and timber supply. This strategy document broadly analyzes the full potential range of silviculture activities in order to create a context for an incremental silviculture strategy for TFL 6.

An incremental silviculture strategy should not be confused with the AAC determination process. AAC's are based on actual practice and current information at the time of the determination. This strategy, on the other hand, is about creating a future state of our forests. The degree to which the strategy proves appropriate and is achieved may influence future, but not necessarily current, AAC determinations.

This strategy is founded on readily available information and the knowledge of forestry professionals. It is intended as an interim strategy until a more in-depth analysis-based review is completed.

Methodology

This strategy was prepared through the following process:

1. Initially B. A. Blackwell and Associates Ltd. and Compass Resource Management Ltd. (the consultants) prepared a preliminary draft of this report, summarizing available information relevant to a strategy and identifying opportunities to improve the future quantity and quality of timber and habitat.
2. The preliminary draft report formed the basis for a workshop that was held December 12, 2000 in Port McNeill. This workshop was led by B. A. Blackwell and Associates Ltd. and attended by WFP staff from TFL 6 and head office, Dr. John Barker (Silviculture Chair, UBC), Larry Sigurdson of the MoF Regional Office and a representative of the Port McNeill MoF district office. Participants reviewed the potential opportunities identified in the draft report along with other treatments that were suggested.
3. Following the workshop the consultants incorporated the workshop feedback into the draft report and produced and circulated a questionnaire for prioritizing the potential treatment opportunities. Responses to the questionnaire were subsequently used to develop a silviculture regime table along with the resulting forecasts of future harvest quantity and quality and of job outcomes.
4. After WFP and MoF review, a completed strategy document will be submitted to the MoF.

Acknowledgements

The project was coordinated through Mr. Larry Sigurdson of the Ministry of Forests, Vancouver Forest Region. Funding was provided by Forest Renewal BC. Input from the following people is gratefully acknowledged:

Representative	**Company/Agency**
Paul Bavis	WFP
David Byng	WFP
Mike Dietsch	WFP
Eric Gagné	WFP
Brian Voth	WFP
Doug Folkins	WFP
Dr. John Barker	FRBC Chair in Silviculture, UBC
Tom Hartz	MoF - Port McNeill District
Larry Sigurdson	MoF – Vancouver Region

Basic Data

(Source for this Section: Timber Supply Analysis Information Package for Management Plan 9 for TFL 6, WFP)

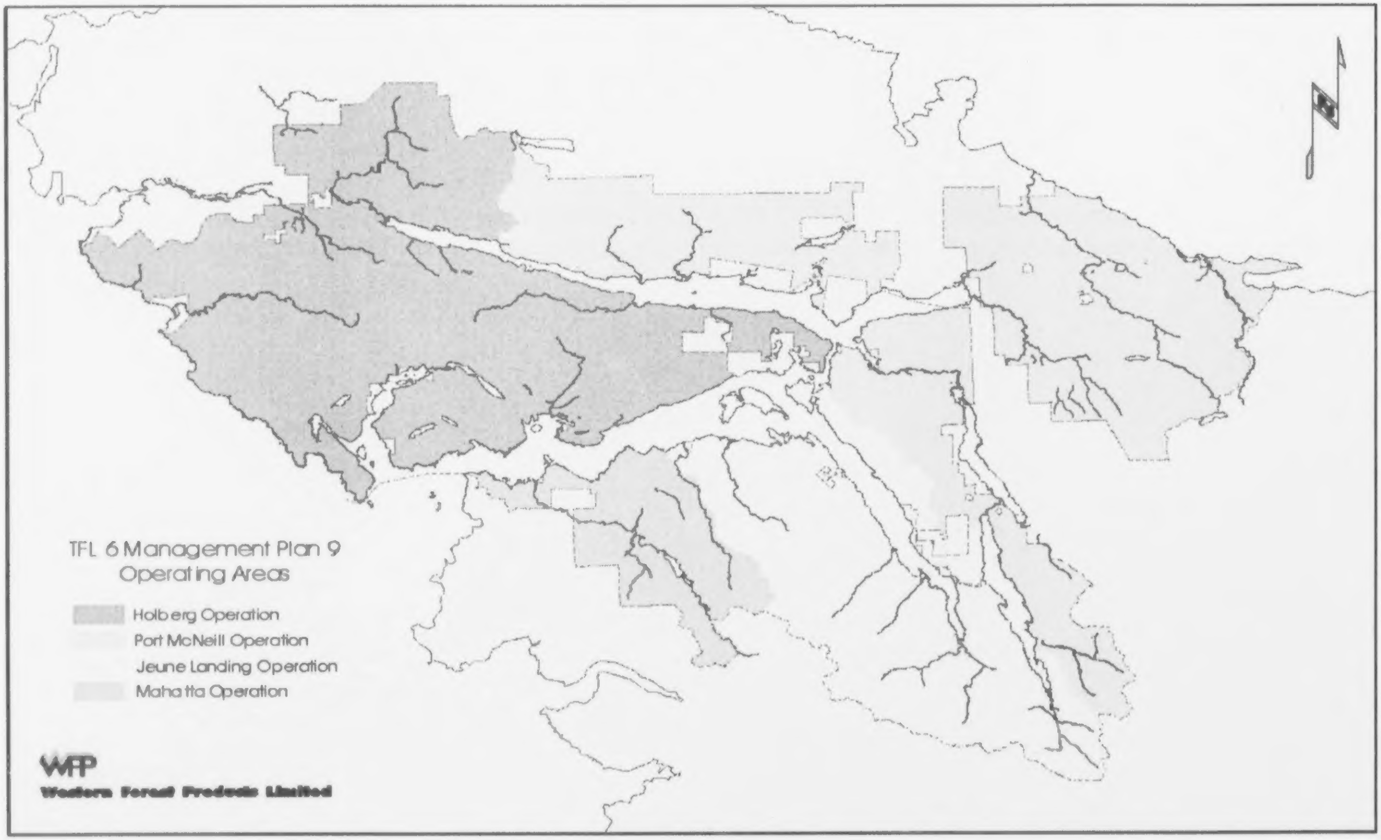

TFL 6 Management Plan 9
Operating Areas
Holberg Operation
Port McNeill Operation
Jeune Landing Operation
Mahatta Operation
WFP
Western Forest Products Limited

Figure 1. Overview of TFL 6

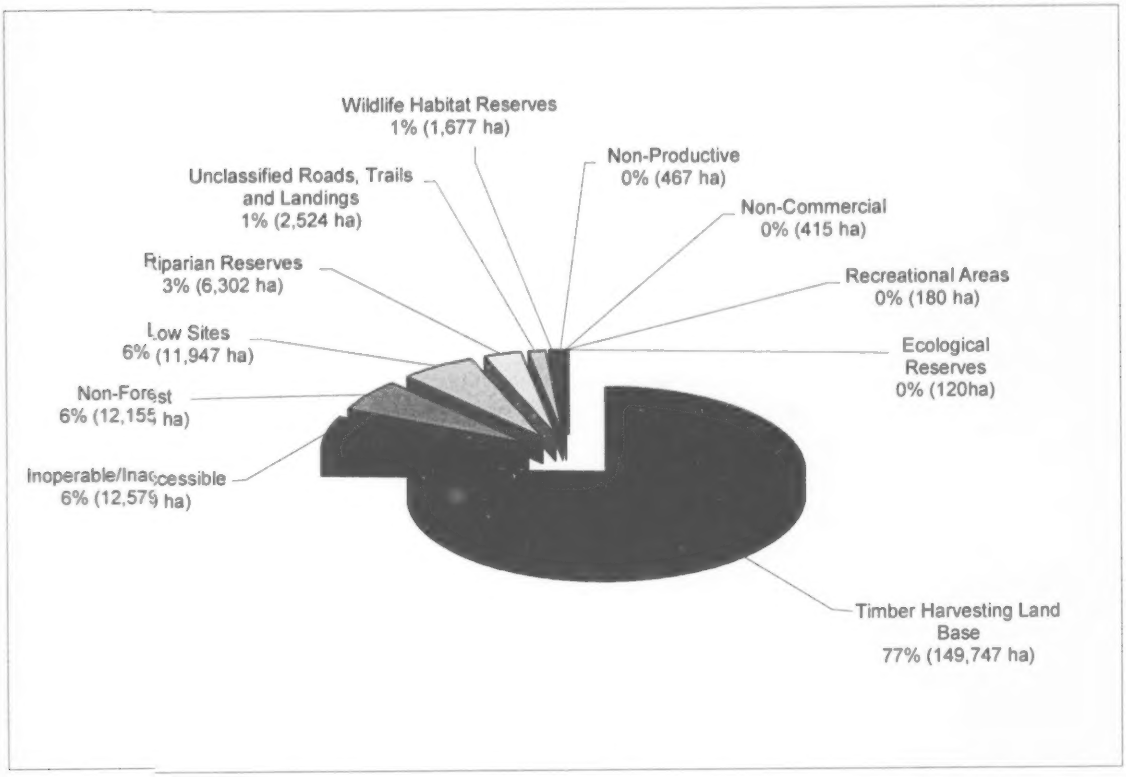


Figure 2. Breakdown of Productive Forest Land

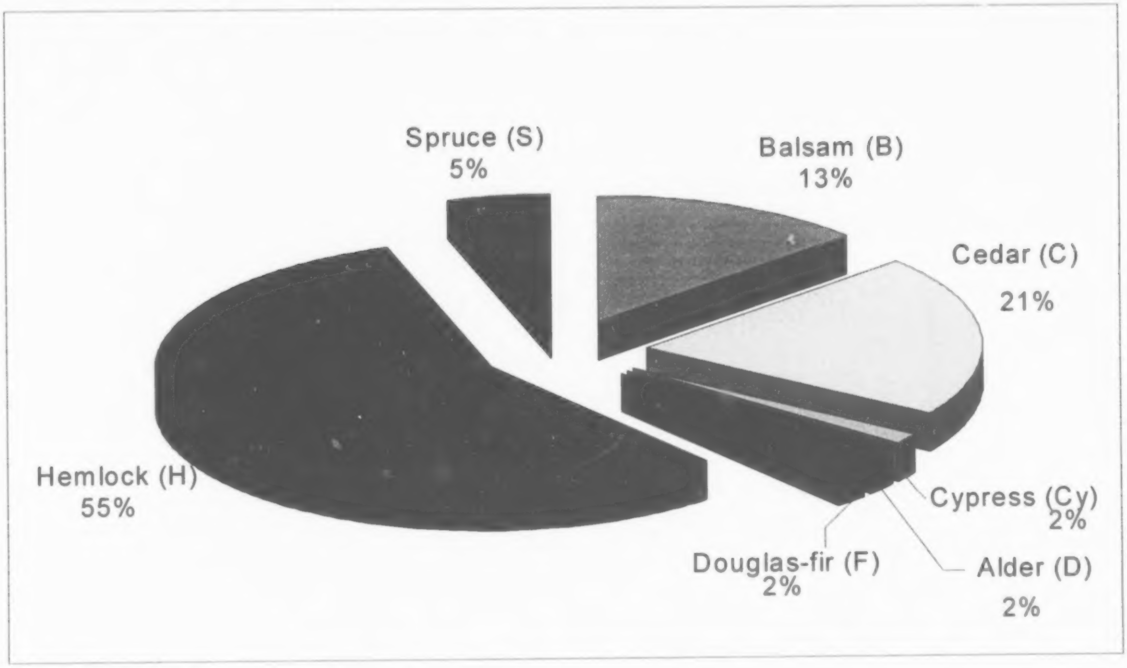


Figure 3. Distribution of Tree Species on the THLB

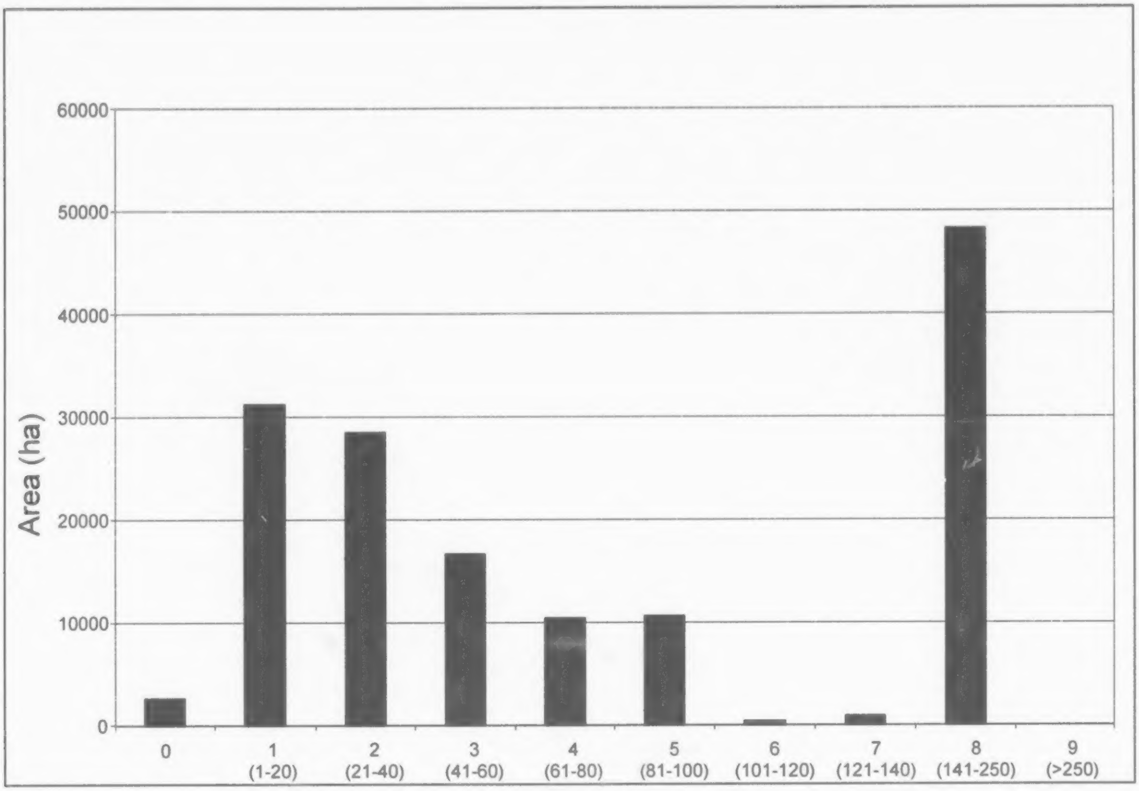


Figure 4. Age Class Distribution on the THLB

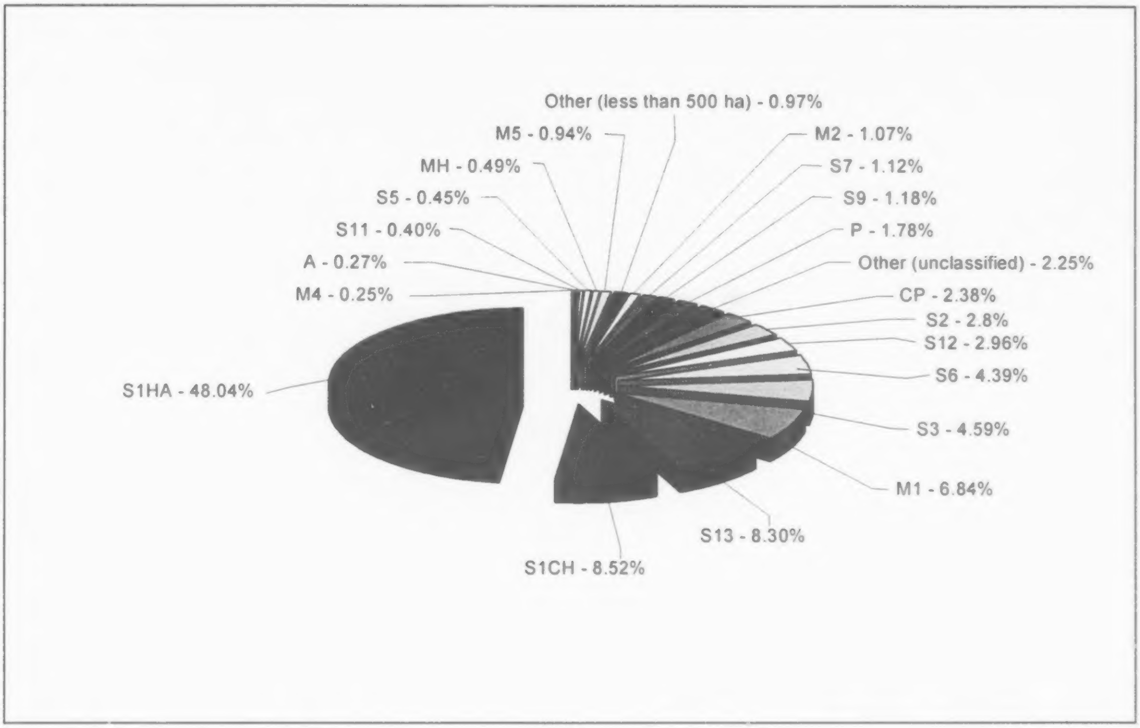


Figure 5. Lewis Ecosystem Unit Distribution on the THLB

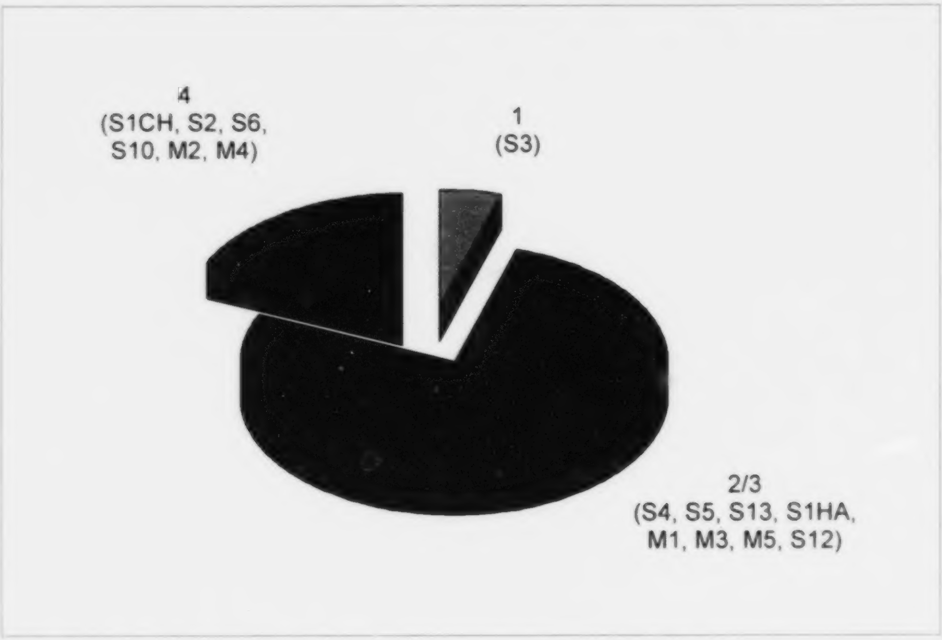


Figure 6. Distribution of Productivity Groups on the THLB

Table 1. Site Index Values by Productivity Group

Productivity Group	Lewis Ecosystem Units	Leading Species				
		H	C	B	S	F (Dec & Pl, Pw)
1	S3	33.7	27.0	30.1	35.2	37.5
2/3	S4, S5, S13, S1ha, M1, M3, M5, S12	28.0	23.8	26.2	31.0	31.4
4	S1, S2, S6, S10, M2, M4	20.1	19.2	20.7	25.0	22.6

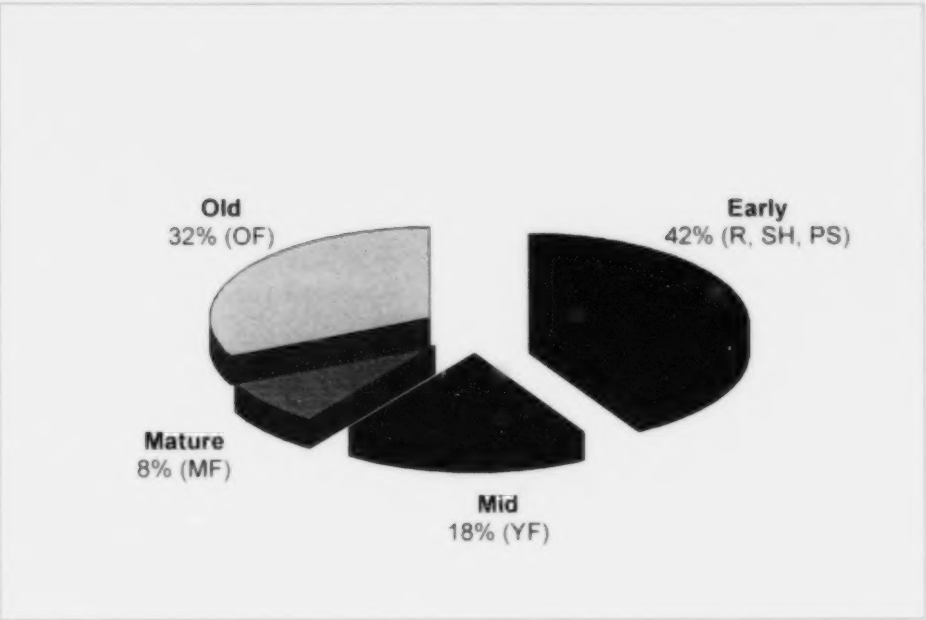


Figure 7. Seral Stage Distribution on the THLB

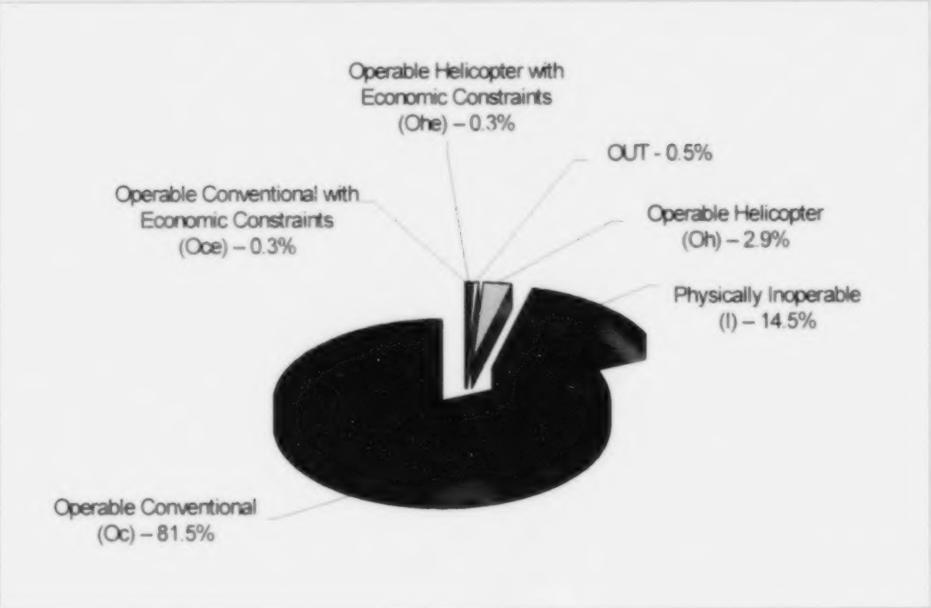


Figure 8. Operability

Silviculture History and Status

(Source for this Section: TFL 6 1999 Annual Report, WFP)

Basic Silviculture

- Since 1950 almost 73,000 ha have been logged. Over the last 5 years the average annual harvest has been about 1,440 ha.
- Since 1950 almost 38,000,000 trees have been planted on approximately 41,000 ha. Currently almost all of the harvested area is planted. The majority of planted seedlings are from genetically improved seed.
- Since 1950 site preparation (primarily prescribed burning) has occurred on 27,000 ha. Currently only a minor amount of site preparation is being done.
- Since 1950 approximately 25,000 ha have been brushed. Over the last 5 years the average annual area brushed has been about 1,100 ha. As of the end of 1999 about 2,100 ha were classified as NSR. Of this NSR virtually none was classified as backlog.

Incremental Silviculture

- Since 1965 almost 11,000 ha have been juvenile spaced. Currently about 300 to 400 ha per year are treated.
- Since 1965 about 10,000 ha have been fertilized. Most of this fertilization has occurred within the last five years and has been primarily on salal sites.
- Since 1984 almost 2,800 ha have been pruned. Most of this program has occurred within the last five years.
- Since 1981 several small commercial thinning trials have been done.

Issues and Silvicultural Opportunities

Status of Silviculture Treatments and Other Key Issues relative to Management Plans 8 & 9

(Sources for this Section: Management Plans 8 and 9 for TFL 6, WFP)

Issue or Treatment	**MWP #8 Status (Jan, 1995)** Incorporated in Timber Supply Analysis [Yes or No]	**MWP #9 (Draft; Nov, 2000)** Incorporated in Timber Supply Analysis [Yes or No]
Implementation of FPCA and Van. Is. LUP	No	Yes
Future estimate of PAS	Yes; 5%	Yes; 4%
Min. Harvest Size for G, M and P sites	Yes; 45, 40 and 35 cm quadratic mean dbh	Yes; 42, 37 and 35 cm quadratic mean dbh
Utilization of Non-conv. Harv areas	No; ~1300 ha suitable for heli. Not included in AAC; results in partitioned harv of ~10,200m3/yr	Yes; included in AAC
Utilization of Low sites	No; some low site not included in AAC; results in partitioned harv of ~26,000m3/yr (1/2 of pot. Contribution)	No, productivity group 5 excluded; Results exceeded MWP #8 partition expectations.
Deciduous-leading stands	Only coniferous volumes included in timber supply. AAC assumes that ~2260 ha will be harvested and converted to conifers through a rotation in conjunction with adjacent conifer harvest blocks.	Only coniferous volumes included in timber supply. AAC assumes conversion to coniferous-leading stands through natural succession increasing volumes to harvestable conifer minimums.
Growth & Yield models used for existing 2nd Growth stands	TIPSY for Fd, VDYP for Ba and decid. WFP's local tables for Hw, Ss, Cw and Yc.	VDYP for deciduous stands >40 years old. Rest TIPSY.
SIBEC	Yes	Yes; Revised and updated with statistical site index assignment by productivity group
Forest Inventory	Based on 1970 inventory. For AAC determination, inventory updated to 1990.	Based on 1970 inventory. For AAC determination, inventory updated to January 1, 1998. VRI in progress.
Backlog	None.	None.

Issue or Treatment Cont'd	**MWP #8 Status** **(Jan, 1995)** Incorporated in Timber Supply Analysis [Yes or No]	**MWP #9** **(Draft; Nov, 2000)** Incorporated in Timber Supply Analysis [Yes or No]
Pre-FTG		
Reforestation	Yes; Regen delay 2 to 3 years on good sites and 5 years on rest of ecosites.	Yes; Planting on most sites. Regen delay of 1 to 2 years on low elevation. sites and 4 years on high elevation ecosites. Fertilization at time of planting included for all salal sites.
Tree Improvement	No; 1st generation stock being used in planting programs. No gains modeled in AAC determination.	Yes; Improved stock continuing to be used. 5 to 15% Hw gains modeled in AAC determination for current and future planting.
Post-FTG		
Space	Yes; ~770 ha/yr assumed in AAC determination	Yes; 300 ha/yr assumed in AAC determination (subject to the availability of suitable stands)
Prune	No	No
Fertilization	No.	Yes; All Cw-salal sites to be fertilized.
Commercial Thin	No. MWP 8 commits to feasibility studies.	No. Same as for MWP 8.

Higher Level Goals and Objectives

This section documents higher level goals and objectives relevant to an incremental silviculture strategy for the TFL.

Provincial Goals

Fundamentally, government's goals can be characterized as:

- sustainable use;
- community stability; and
- a strong forest sector. (MoF, 1998a)

Provincial Objectives

Until provincial targets for timber quantity and quality are established, management unit strategies are to consider the following interim provincial strategic objectives (MoF, 1998a). Incremental silviculture strategies must also be in keeping with higher level plans under the Forest Practices Code.

Objective 1: Maintain current harvest levels as long as possible without creating disruptive shortfalls in future timber supply.

Objective 2: Create a long-term timber supply capable of supporting a steady long-term provincial harvest level similar to current levels.

Objective 3: Minimize the interim shortfall in provincial harvest anticipated before a steady long-term timber supply is achieved.

Objective 4: Create a long-term timber supply, which will enable the timber quality profile of future harvest to be the same or better than the current profile.

It is recognized that not every management unit has the same capability to contribute to these interim objectives. Further, it is recognized that these objectives may not be attainable at current funding levels. Their purpose is to provide general guidance to the application of available funds.

Regional Objectives

The objectives of the regional incremental silviculture strategy are to:

- Ensure a long term sustainable harvest, which approximates the current harvest value and volume levels and that produces a diversified mix of products necessary to create and maintain sustainable forest employment.
- Balance treatments that enhance growth and yield such as fertilizing, spacing and forest health activities with those that increase the value of the wood such as pruning.
- Utilize incremental silviculture treatments to contribute to sustainable management of non-timber values at the landscape level. (MoF, 1998b)

Review of the Timber Supply Analysis (MWP 9)

(Source for this Section: Timber Supply Analysis Section of Management Plan 9 for TFL 6, WFP)

The following figures summarize the AAC forecast for the CMO (Figure 9) according to the current TSA and show the impacts of this forecast on annual harvested area, average harvested diameter, volume per hectare and harvested age (Figures 10 and 11). These figures show a step down in the harvest from now until about 2050 as the remaining non-constrained old-growth is harvested. From about 2020 to 2050 there is a shift in harvesting to second growth. After about 2050 the harvest is entirely from second growth and the AAC recovers slowly until about 2140. As a result of past and projected future silviculture treatments and stand diameter targets, the second growth volumes at the projected harvest ages tend to be higher than for the currently harvested old-growth and lead to a "fall up" in harvest levels.

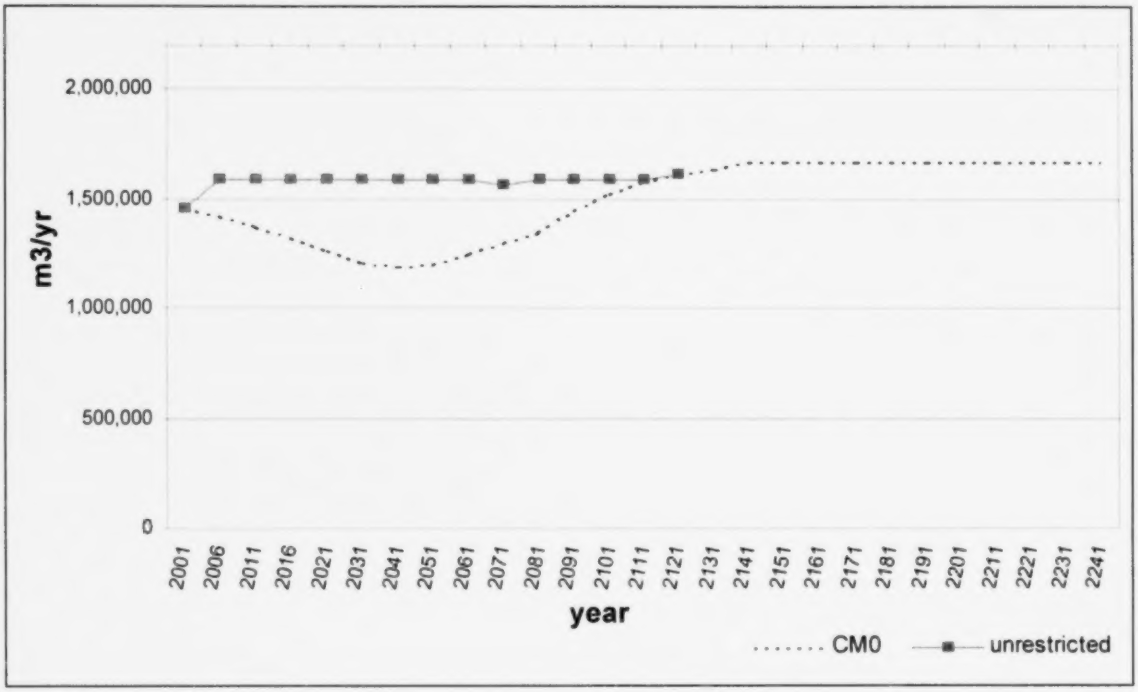


Figure 9. Current Management Option (CMO) and Unrestricted Harvest Rates

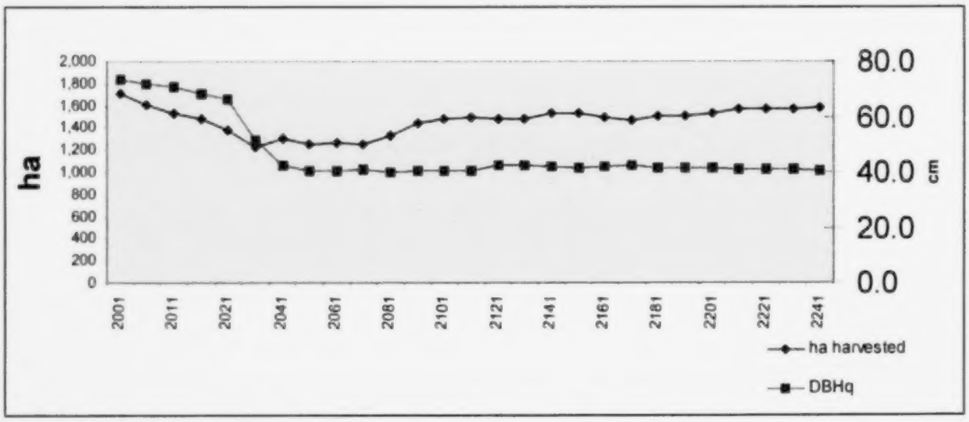


Figure 10. Annual Area Harvested and Average Diameter Harvested

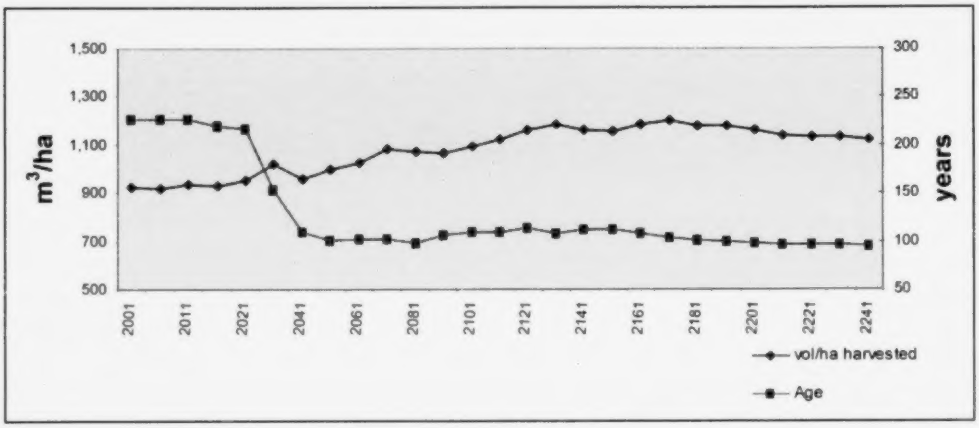


Figure 11. Annual Volume/ha and Age Harvested

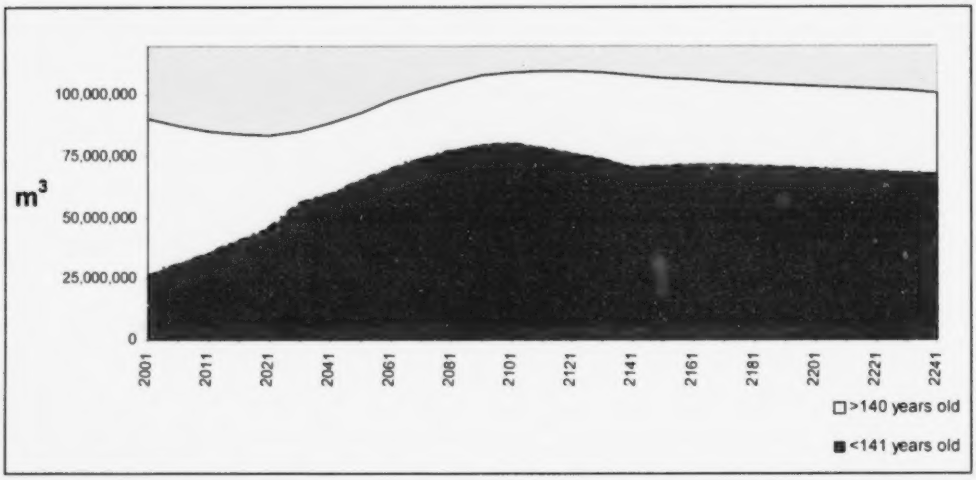


Figure 12. Growing Stock Distribution under the CMO

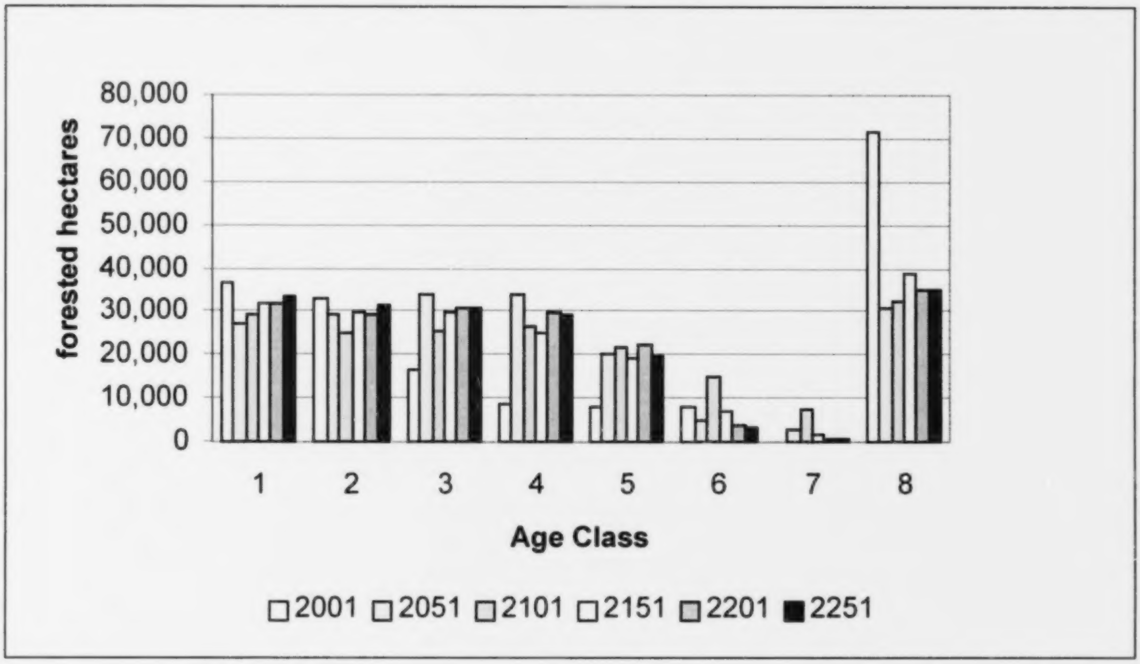


Figure 13. Age Class Distribution under the CMO from 2001 through 2251

Individual Issues and Opportunities Analysis

The following information is primarily from the Timber Supply Analysis (TSA) Section of Management Plan 9 for TFL 6. Only information that is relevant to an incremental silviculture strategy has been recorded. Key statements have been bolded. Sensitivity analysis charts from the TSA are presented to highlight the key issues.

Key Issue	Period(s) Effected	Discussion (Key issues, opportunities)
Non-Timber Resources		**Policies developed over the last two decades to ensure multi-resource sustainability limit the timber supply in the short to medium-term. Reductions in the amount of old forest available for harvest result in the annual allowable cut (AAC) being stepped down over the next 50 years (see Figure 14). During this period these policies are the primary factors affecting timber supply.**
Green-Up	Medium-term	Mid-term harvest rates are slightly sensitive to +/- 2 meter changes in green-up heights. **Removal of the green-up constraint has a moderately significant positive impact on mid-term timber supply** (see Figure 15). *Opportunities:* fully stock and accelerate early growth rates by prompt reforestation, fertilization at time of planting, use of genetically improved stock and early removal of brush competition. **Use of partial cutting or a retention silviculture system which removes or reduces adjacency concerns.**

Key Issue Continued	Period(s) Effected	Discussion (Key issues, opportunities)
Timber Resources		
Age Class Distribution	Short to medium-term	**An age class gap created by the loss of old forest from the THLB is the key reason which leads to the step down in the AAC through ~2050** (corresponds to the liquidation of the remaining available old forest). From about 2020 to 2040 the harvest shifts to second growth. After 2040 the entire AAC is from second growth (see Figure 13). *Opportunities:* **treatments which can make more second growth stands harvestable between 2020 and 2050**. Examples of potential treatments are juvenile spacing of pole-sapling stands and regenerating some richer sites to alder that could be managed over a 30 to 50 year rotation. In addition a commercial thinning program which starts in about 2030 would be beneficial.
Rotation and minimum harvest ages	Short to Medium-term	**The timber supply is very sensitive to minimum stem size at harvest in the AAC "trough" between 2010 and 2100 (see Figures 16 and 17).** Harvest age is set based on achievement of target dbh. This system is based on economic operability and generally results in harvest ages which are > biological rotations. There is no provision for minimum harvest ages. *Opportunities:* **any treatments that can be done in second growth to reduce the merchantable harvest age, particularly for stands that can be used to reduce the effect of the "trough".** Examples of potential treatments are juvenile spacing and/or fertilization.
Species distribution and quality	Medium to long term	**Established second growth stands are dominated by Hw. Given the current problems marketing Hw, this lack of diversification may be a problem.** Second growth piece sizes will be small and uniform and will yield mostly construction grades of lumber. Some clear cuttings should come from pruned second growth stands which are harvested after about 2070. *Opportunities:* **where ecologically appropriate, diversify the species used in reforestation** (ie: manage for Dr on some richer sites, manage some more non-salal types for Cw, use Fd wherever possible and establish weevil resistant Ss-Hw or Ss-Ba mixes on the more productive sites). Continue or increase the pruning program on Hw and Fd leading stands (also look at pruning other species such as Ss [in closed stands only due to epicormic branching]).

Key Issue Continued	**Period(s) Effected**	**Discussion (Key issues, opportunities)**
Timber Resources Cont'd		
Deciduous-leading stands	Short to medium-term	**There are about 2700 ha of deciduous-leading stands on the THLB.** The deciduous volumes from deciduous-leading stands have not been included in the Timber Supply Analysis (TSA) for MWP #9. **The TSA shows that if the deciduous volumes were included there is potential for a modest increase in the AAC.** *Opportunities:* **stand conversion/harvesting of the best, non-constrained alder-leading stands.**
Operability, Utilization of stands on low sites	Short to medium-term	**Recently harvesting from stands growing on lower site classes has exceeded AAC requirements. Continuation of this performance could lead to a modest increase in AAC.** Helicopter logging has been ongoing for the last few years improving operability. Mapping of operability has recently been updated. *Opportunities:* **Continue to utilize stands on lower site classes as markets allow.**
Intensive Silviculture	Long-term	Past silviculture (basic and intensive) efforts have and continue to soften the effects of recent harvesting restrictions. Past silviculture treatments are projected to have reduced the AAC reductions in the "trough" (~2021 to 2091 by about 8%). **According to the TSA, future intensive silviculture treatments such as juvenile spacing, fertilization and tree improvement do not impact the timber supply until the long-term** (ie: after ~2140). After this time future intensive treatments, of the magnitude assumed in the CMO, potentially account for between 5 and 20% of the projected AAC (see Figure 18). *Opportunities:* **Continue intensive treatments at or above CMO levels.**

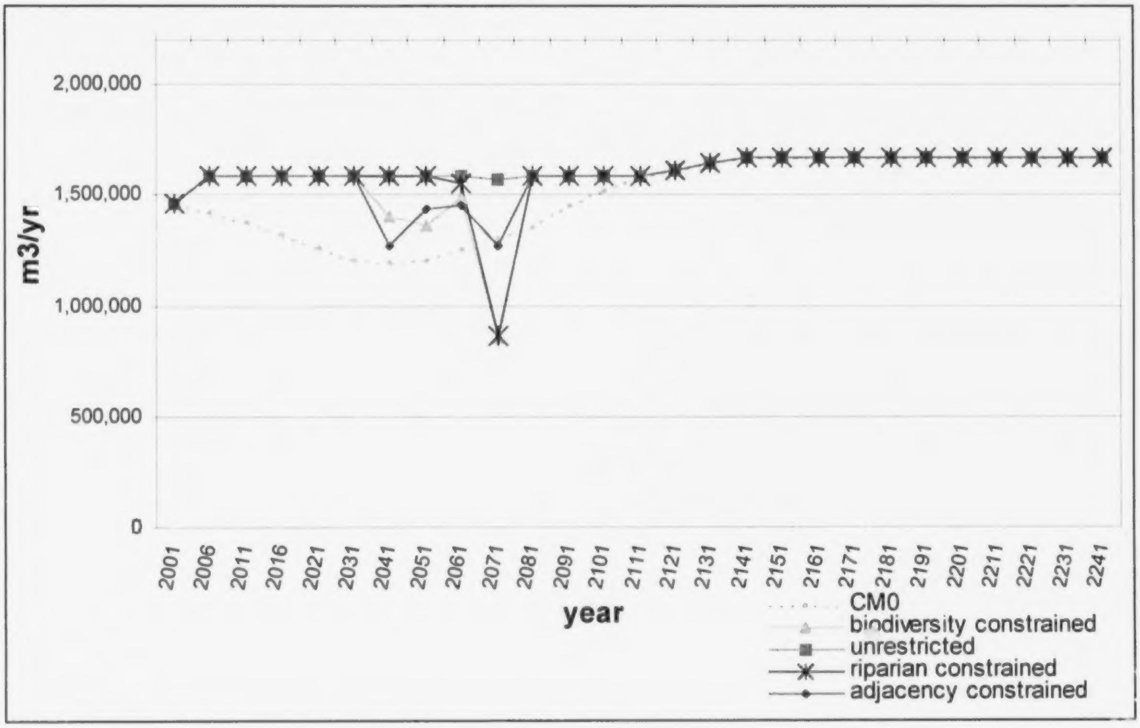


Figure 14. Impacts of Non-Timber Resource Constraints

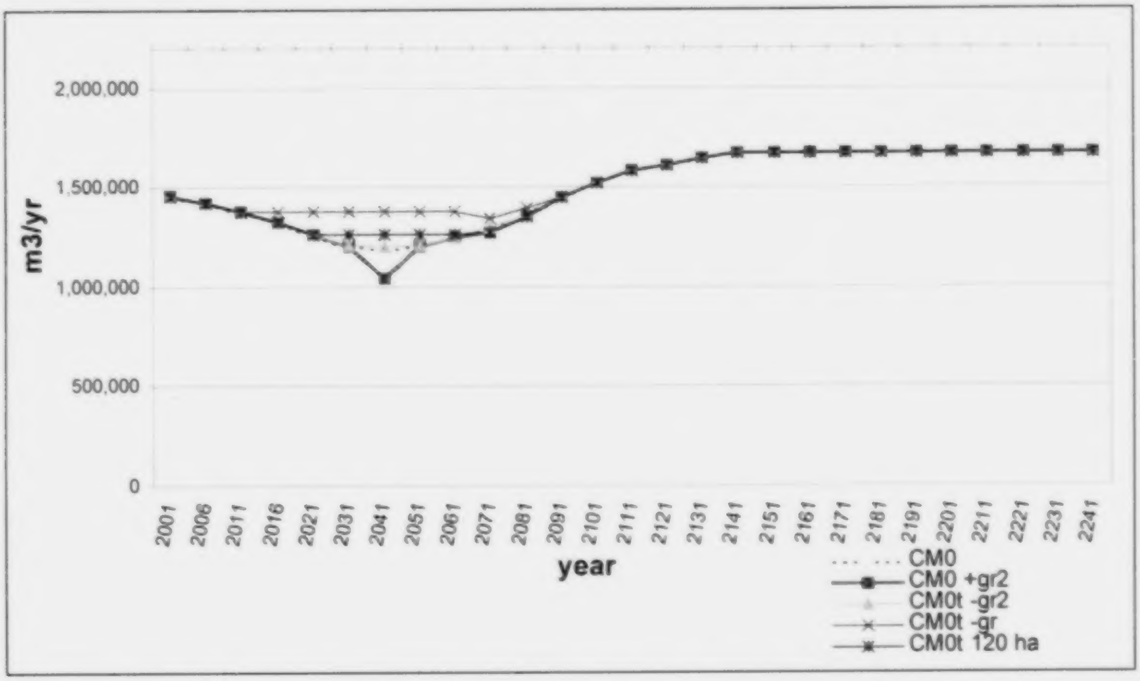


Figure 15. Green-up and Adjacency Effects

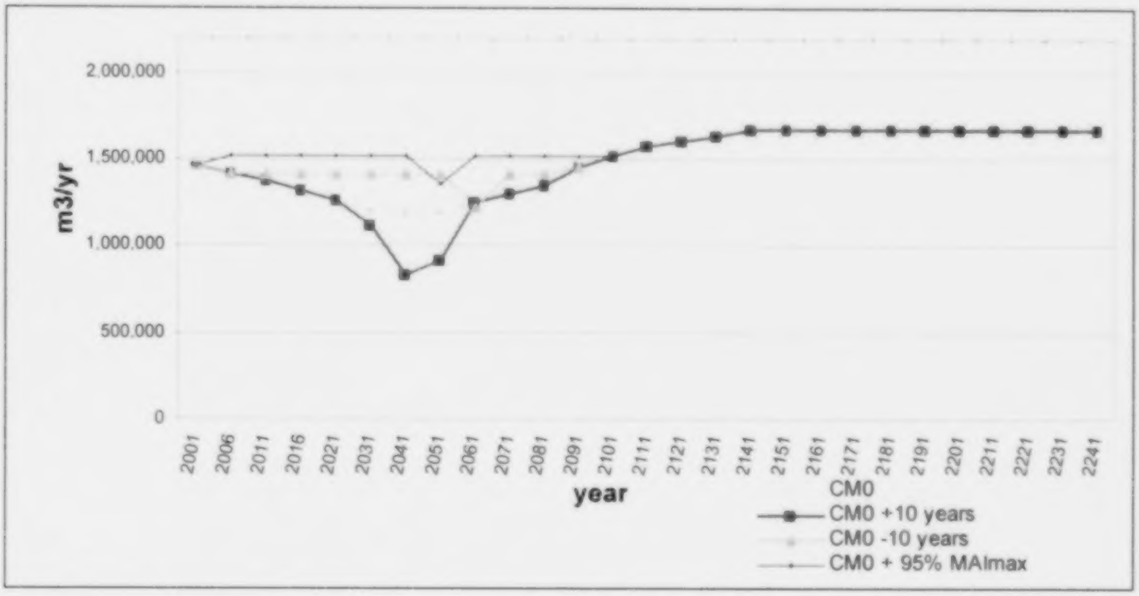


Figure 16. Impacts of Changes to Minimum Harvest Age

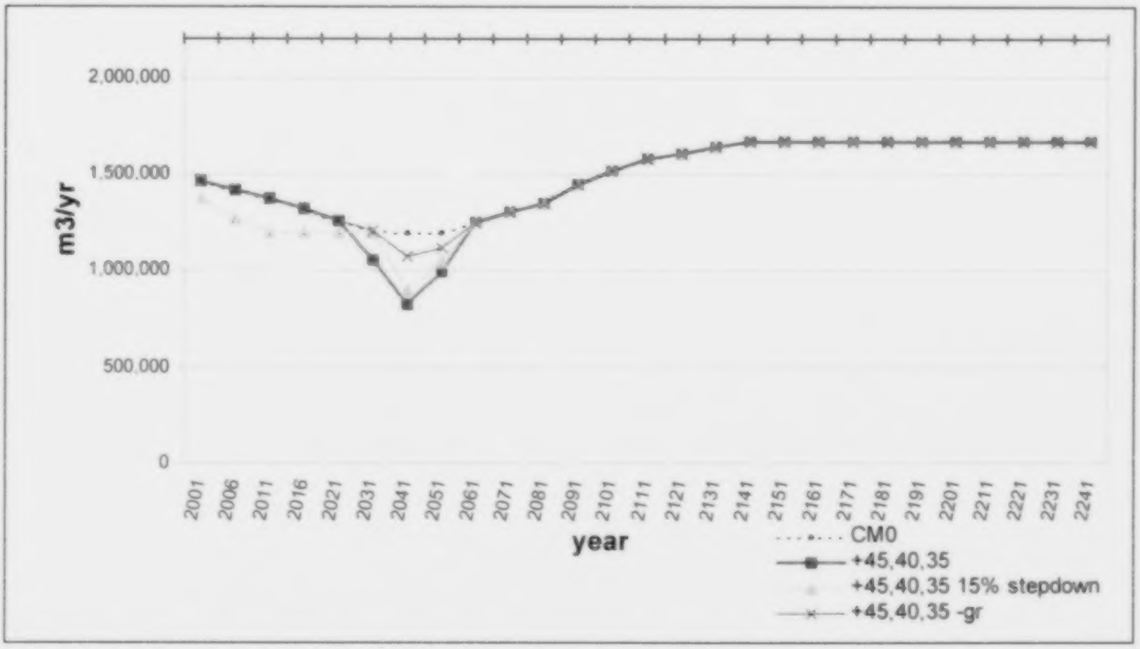


Figure 17. Impacts of Changes to Minimum Harvest Sizes

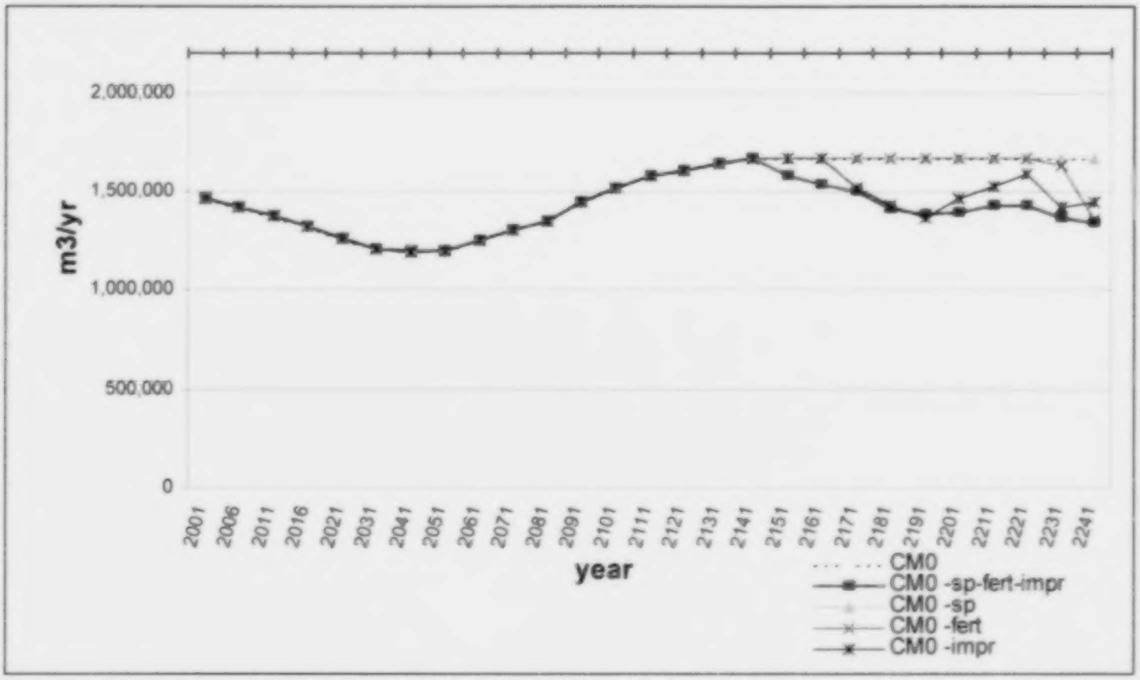


Figure 18. Impacts of not doing Selected Future Incremental Silviculture Treatments

Other Timber Supply Issues by Period

Short-Term (1 – 20 years)

- Potential inaccuracies in the old growth inventory.
- Changes to the THLB which involve mature timber (see Figure 20).
- Changes in the regulations governing forest practices that involve mature timber (Ie: max. opening size, green-up, biodiversity seral stage targets, etc.)
- Changes to harvesting techniques and/or markets which allow for utilization of previously uneconomic wood.

Mid-Term (21 – 100 years)

- Potential inaccuracies in the managed stand inventory and growth projections (see Figure 19).
- Changes to the THLB which involve immature timber.
- Changes in technology which effect operability and markets.
- Improved silvicultural opportunities/returns through research.

Long-Term (100 + years)

- Short and medium term changes and,

- Global warming.

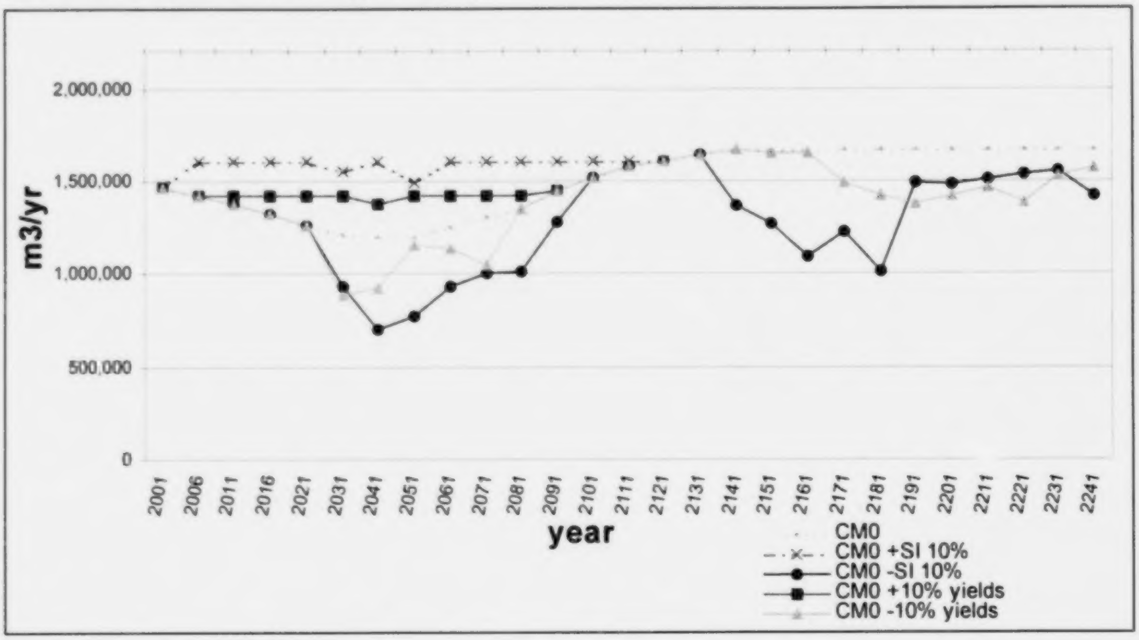


Figure 19. Impacts of Changes to Yield Curves

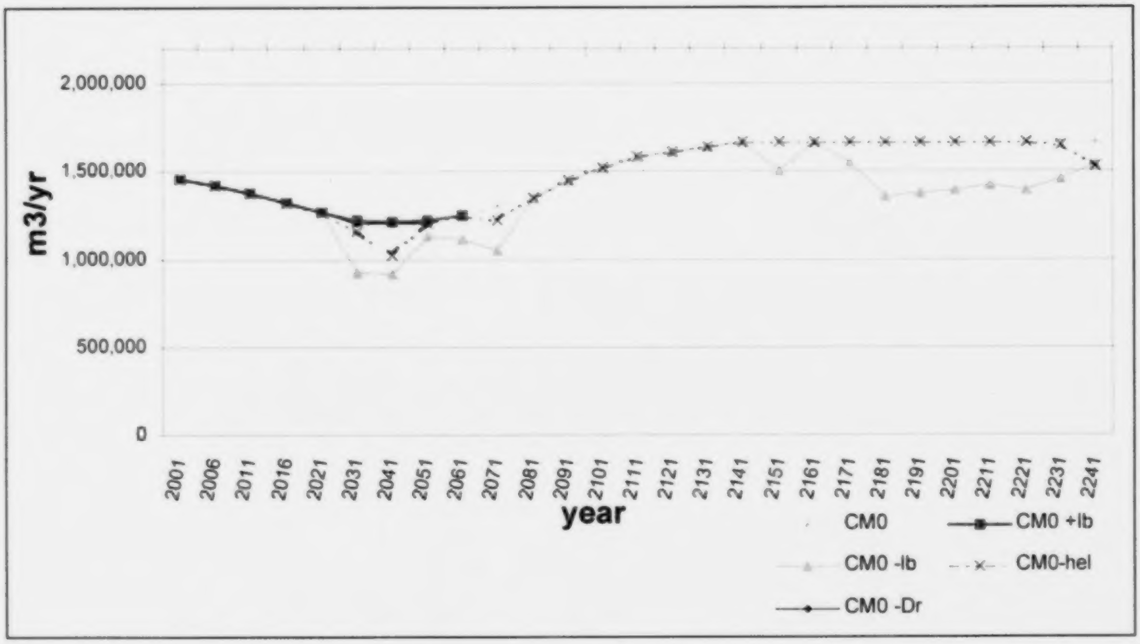


Figure 20. Impacts of Changes to the THLB due to Operability and deciduous

Opportunities to Increase Timber Supply

Information from the previous sections of this report were used by the consultants to identify several potential treatment options. While it is recognized that the most appropriate way to deal with most forest-level issues is by designing a series of treatment regimes (a series of silviculture treatments), as a starting point individual treatments were reviewed.

Treatments were initially divided into two groups "Main" and "Experimental". "Main" treatments are those that are already practiced and the treatment effects and cost/benefits are well understood. "Experimental" treatments are those which are not currently being done operationally on the TFL and which require more study and research before they can be implemented.

For each treatment option presented preliminary screening criteria were developed to indicate which stands and sites would be potentially suitable for treatment. Using these criteria the TFL database was queried to determine rough opportunity areas for each treatment.

For each treatment the assumed prescription for implementation of the treatment was listed under "Treatment Details".

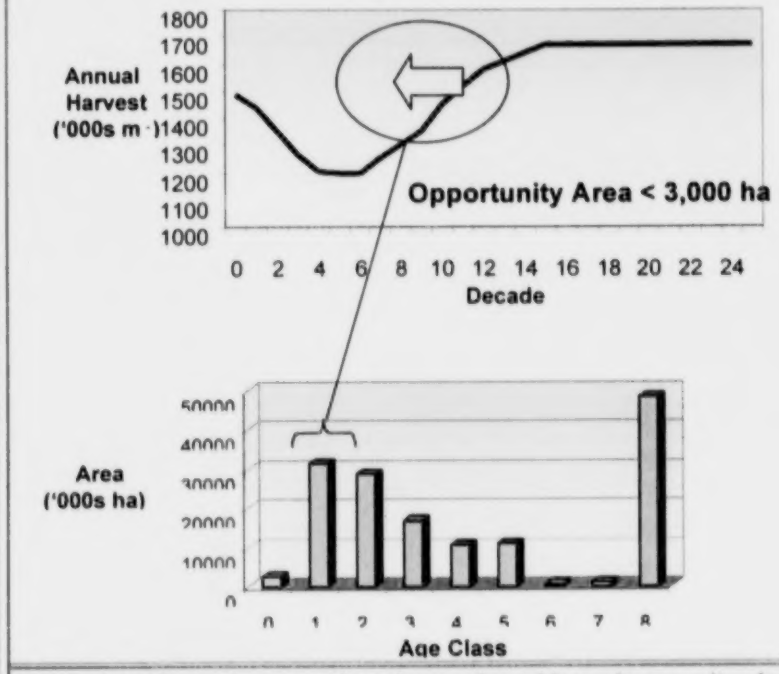
For each treatment the expected stand-level treatment effects are listed together with the term(s) in which the effects can be expected. As this timber supply is most constrained by minimum harvest age/piece size, for treatments which affect volume or minimum harvest age/piece size, the treatment effect was taken on minimum harvest age.

Each of the treatment options was discussed in detail at the workshop along with other strategies which arose during the meeting. A summary of the discussions is listed for each treatment.

Review of "Main" Potential Treatment Options

These treatments include juvenile spacing, SCHIRP fertilization, fertilization at time of planting and reforestation with genetically improved seed.

Juvenile Spacing

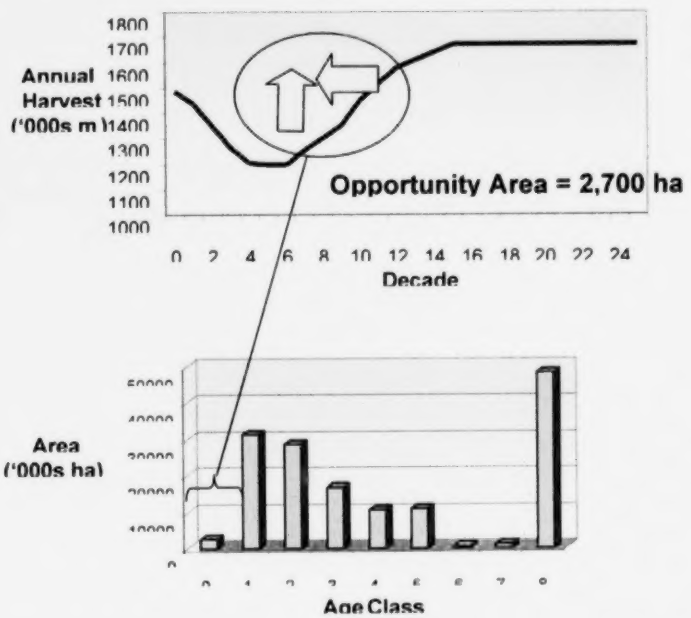


Screening Criteria	
Ecosystems	S1ha, S13, S12, S3
Structural Stage	PS (10-15 yrs)
Type (Spp comp)	H-H (B,S,C)
Density	>3000sph
Slope/terrain	< 30% / no issues
Access	Road / < 50km from town
Treatment Details	
Density	850 crop trees/ha
Inter-tree distances	3.7m (target), 2.0m (min)
Species and/or size preferences	Tallest tree regardless of species.
Treatment Effects	
Mid-term	
Timber Volume	↓
Min. harvest age	↓
Quality	↑
Biodiversity	↑ Natural succession
Jobs	5 –7 days / ha
Cost	$ 1,500 - $ 2,500 / ha

Notes: Juvenile spacing can reduce the merchantable age however it reduces the volume recovered. Changes to residual density will impact the diameter distribution (and therefore rotation age), timber quality and volume / ha at harvest. Therefore, the impact of varying residual density needs further evaluation. There was much discussion about whether spacing could impact the 2041 to 2060 "trough". Using WINTIPSY and the minimum piece sizes from the TSA it appears as though spacing only the very best sites would have an impact on the "trough". However using a spreadsheet model developed by J. Barker which was based on WFP's local Hw growth curves, spacing was shown to reduce the harvest age about 40 years on S1ha sites. This issue will be studied further.

The TFL Forest Cover database shows that up to 3,000 ha meet the Screening Criteria. WFP foresters feel that most stands that needed spacing had been spaced and that the opportunity area is <400/year. This discrepancy needs to be evaluated.

SCHIRP Fertilization



Screening Criteria

Ecosystems	S1ch, S10, S12ch
Structural Stage	SH-PS (5-15)
Type (Spp comp)	CH-HC-H(C)
Crown Closure	10 – 30 %

Treatment Details

1st Application	@ 4 – 8 years , Blend of 30.5-23-0 200 kg N and 75 kg of P for a total blend of 740 kg/ha
2nd Application	@ 12-15 years, 46-0-0 N only (if necessary to close crowns) 200 kg of N for a total blend of 455 kg/ha

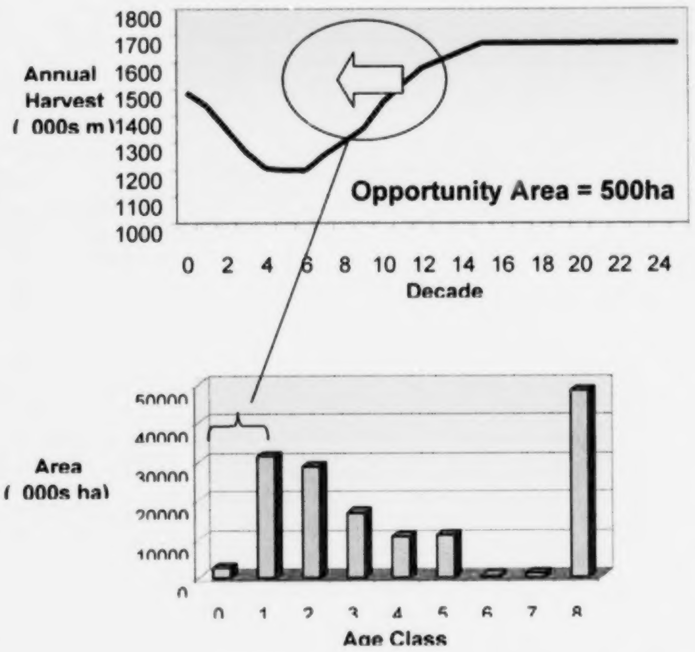
Treatment Effects
Long-term

Timber Volume	none
Min. harvest age	↓
Quality	No impact
Biodiversity	Minor (↑ productivity)
Jobs	0.2 days / ha
Cost	$ 450-600 / ha /application

Notes:

Research on this program is ongoing but results continue to show that this fertilization program is beneficial. For this TSA fertilization is assumed to raise productivity by one group (ie: 4 to 2/3).
Research has shown that the preferred age of the first application is at a stand age of 4 to 5. However, as FRBC funding is only available for FTG stands the actual stand age of the first application is about 8 years.
The opportunity area is an estimate as the Forest Cover Database does not yet track previous fertilization.

Fertilization at Time of Planting



Screening Criteria

Ecosystems	S1ch, S10, S12ch, S3
Structural Stage	Establishment

Treatment Details

Single application per tree

Treatment Effects

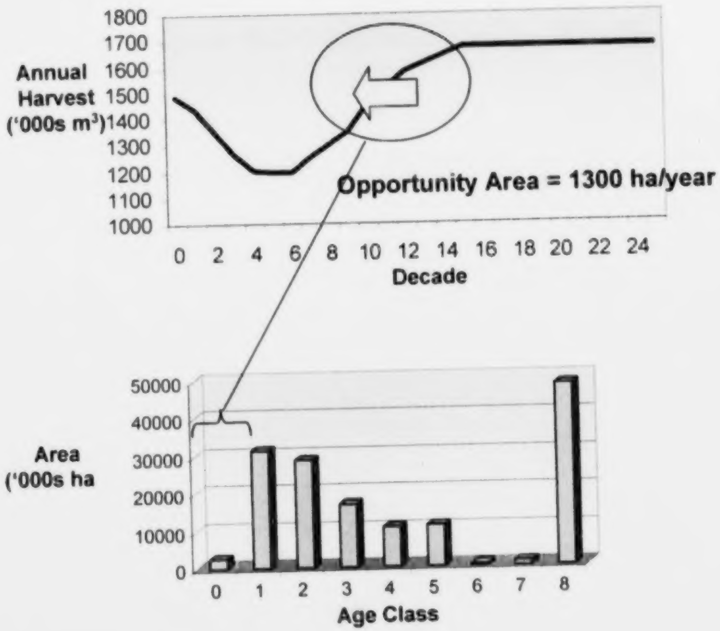
Short-term

Timber Volume	None
Min. harvest age	↓ green-up time
Quality	None↑
Biodiversity	None
Jobs	0.3 / ha
Cost	$130 - $150 / ha

Notes:

Treatment is not eligible for FRBC funding.
All salal sites are treated. Experimental use on potential brush sites is ongoing.
The primary benefit of this treatment on the timber supply is through the fast achievement of green-up to reduce adjacency constraints.

Reforestation With Genetically Improved Stock



Screening Criteria	
Ecosystems	All
Structural Stage	Establishment

Treatment Details	
1st Generation for Fd, Hw, Cw, Yc	

Treatment Effects (Mid) to Long-term	
Timber Volume	None
Min. harvest age	↓
Quality	minor ↑
Biodiversity	None.
Jobs	0.1 / ha
Cost	$17 - 60 / ha

Notes:

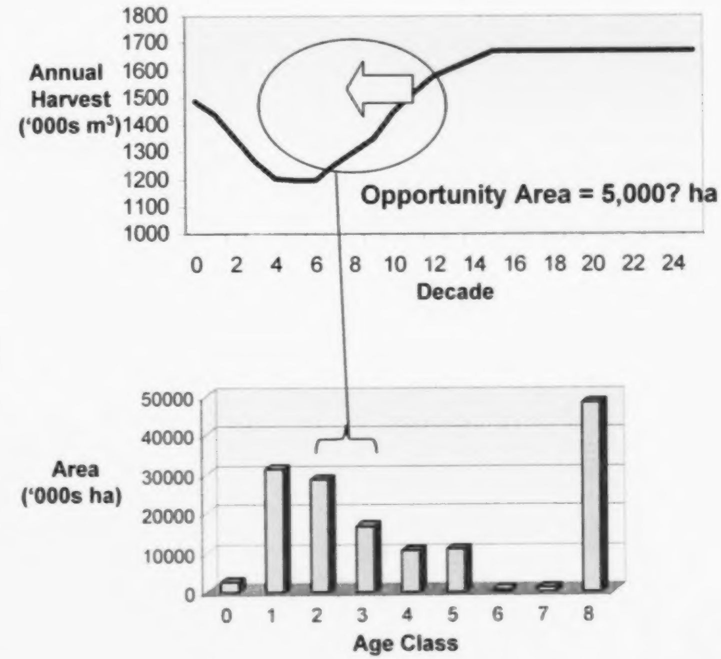
Treatment is not eligible for FRBC funding.

Where available, by regulation, improved seed is required to be used. Currently about 70 to 80% of planted trees are from improved seed. For first generation seed the TSA assumes a 5% gain. Second generation seed for Fd, Hw and Yc is expected to be available by the end of this decade. The TSA assumes a 15% gain for second generation seed of these species.

Review of "Experimental" Potential Treatment Options

These treatments include commercial thinning, "early" commercial thinning (ECT), establishing alder, fertilization (non-SCHIRP), road rehabilitation, harvesting/conversion of deciduous-leading stands and drainage of low productivity sites.

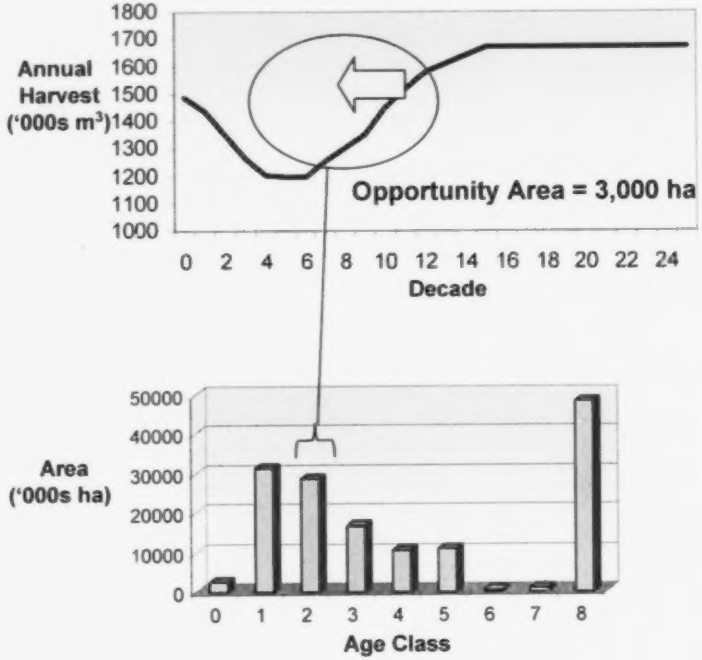
Commercial Thinning



Screening Criteria	
Ecosystems	S1ha, S12, S3
Structural Stage	YF (40-50 yrs)
Type (Spp comp)	H-H(B,S,C,F), F(H,B,C)
Density	> 60 m2/ha
Live Crown of Dom:	CD: > 25%
Slope/terrain	< 20%/ easy GB harv
Access	Close to roads
Treatment Details	
Target retained BA	60 – 75 %
Target removal volume	> 250 m3 / ha
Leave-tree species and/or size preferences	Tallest tree regardless of species with consideration of form, susceptibility to decay, wind resistance and habitat value.
Treatment Effects **Mid-term**	
Timber Volume	No significant impact
Min. harvest age	↓ Initial entry earlier with final harvest at same age
Quality	↓ (thinnings) ↑ (final cut)
Biodiversity	↑ natural succession
Jobs	8 - 12 / ha
Cost	$0 – 3,000 / ha

Notes: Treatment is not eligible for FRBC funding. Small experiments done to date in Hw second growth have not been very successful. Big concerns are losses in the residual stands due to windthrow and damage and profitability. CT is not recommended in the short-term as it would exacerbate the AAC shortfall in the 2040 to 2060 "trough". If CT can be proved viable, it can be used to bring stands forward into the "trough". The TSA shows that an aggressive CT program starting in ~2030 could augment the AAC through the "trough" by over 50,000m3/year. More research,trials, and operational experience are needed over the next 30 years.

"Early" Commercial Thinning



Screening Criteria

Ecosystems	S13, S12, S3, S1ha
Structural Stage	YF (25 -40 yrs)
Type (Spp comp)	H-H (B,S,C,Fd), Fd>50%
Density (crop trees)	1200-1800sph
Slope/terrain	< 20%/ easy GB harv
Access	adjacent to roads, near log dump

Treatment Details

Medium-term

Target retained BA	70 - 80 %
Target removal volume	N/A
Species and/or size preferences	Tallest tree regardless of species with consideration of form, susceptibility to decay, wind resistance and habitat value..

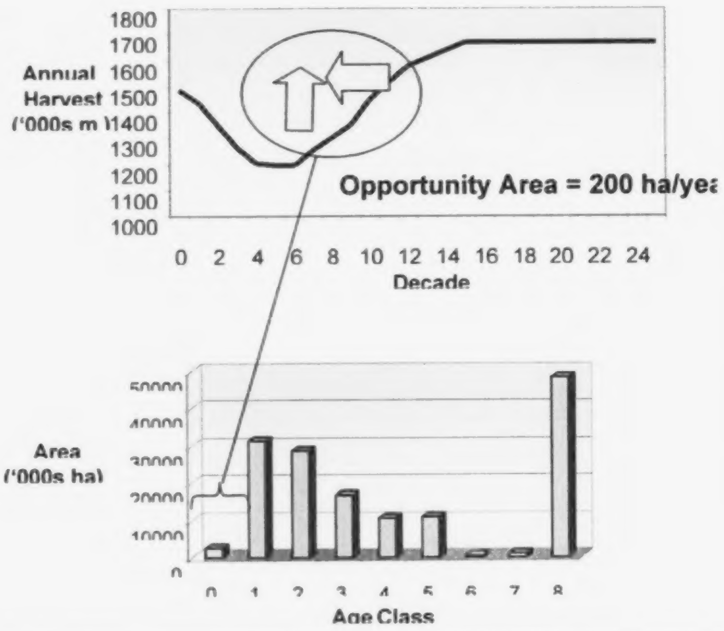
Treatment Effects

Mid-term

Timber Volume	↓
Min. harvest age	↓
Quality	↓ (thinnings) ↑ (final cut)
Biodiversity	↑ natural succession
Jobs	8 – 12 / ha
Cost	$1,000 – 3,000 / ha

Notes: The "Early" commercial thinning (ECT) concept comes from the 1998 FRBC report, *Silviculture Investment Opportunities: A Methodology for identifying Key Decision Variables* (E. McWilliams and R. Carter). ECT is an alternative to JS. It's benefits are the improved economics of harvesting stands which have undergone density management while reducing the cost implications of the density management treatment. ECT implies that the stands must be old enough to recover some economic material but does not mean that the treatment must be profitable. Together with the increase in the value of the residual stand, the recovery of economic material should reduce the treatment cost enough to increase the NPV of the stand. Treatment would not be eligible for FRBC funding. ECT may be viable as a source of pulp to the local pulp mill as harvesting moves into second growth. Feasibility studies and trials are required to further assess.

Establishment of Alder



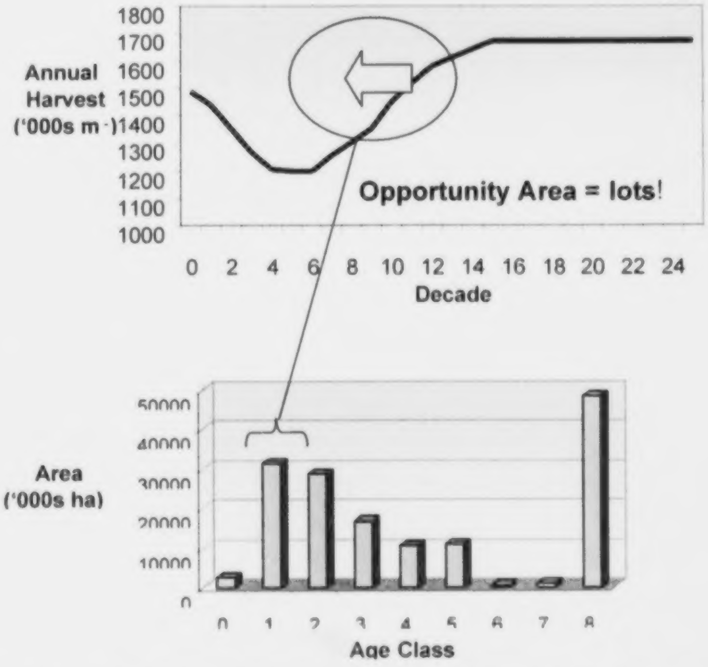
Screening Criteria	
Ecosystems	S3, , (S5)
Structural Stage	establishment
Slope/terrain	< 30% / no issues
Access	Road / < 30km from town
Treatment Details	
Est. Density	1500 – 1700 sph
Site Preparation	thin forest floor or mechanical disturb; chemical prep.
Space and Prune	@ 10-12 yrs to 800-1100sph
Commercial Thin	@ 15-17 to 250-400 sph
Treatment Effects **Mid-term**	
Timber Volume	↑ ?
Min. harvest age	↓
Quality	↑ some clear produced; product diversification
Biodiversity	↑ (habitat diversification)
Jobs	3 -5 / ha
Cost	$1,000 – 2,000 / ha

Notes:

This treatment potentially impacts timber supply constraints in the "trough" and allows product diversification.

Opportunity area is based on the percentage of the annual harvested area which come from ecosystems meeting the screening criteria. Treatment details are based on Weyerhaeuser's regimes from the US Pacific Northwest with final rotation ages projected to be ~50 years. In order to be viable there must be local sawmill capacity (in Campbell River or on northern Vancouver Island) and preferably dry kilns and re-manufacturing facilities. Treatment would not be eligible for FRBC funding. Feasibility studies are required to further assess.

Fertilization on Hw, (Ba, Ss, Cw)-dominated (Non-SCHIRP)



Screening Criteria

Ecosystems	
Structural Stage	

Treatment Details

Blend of N + P	

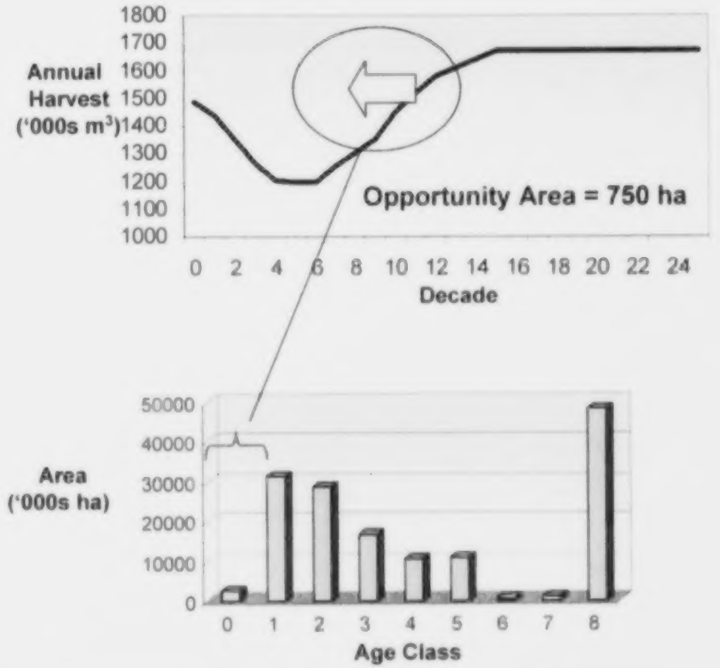
Treatment Effects
Mid-term

Timber Volume	None
Min. harvest age	↓
Quality	minor ↑
Biodiversity	Minor (↑ productivity)
Jobs	0.2 jobs / ha
Cost	$ 450 - 600 / ha / application

Notes:

Hw is the primary species in question. To date research shows that Hw's response to fertilization is inconsistent and not predictable. Due to this TFL's reliance on Hw second growth for the future timber supply, WFP needs to be a leader in Hw fertilization research. Research is also required into the fertilization response of other species such as Ba, Cw and Ss.

Road Rehabilitation



Screening Criteria

Ecosystems	All
Structural Stage	Establishment

Treatment Details

Rehabilitation to achieve	3% PAS

Treatment Effects

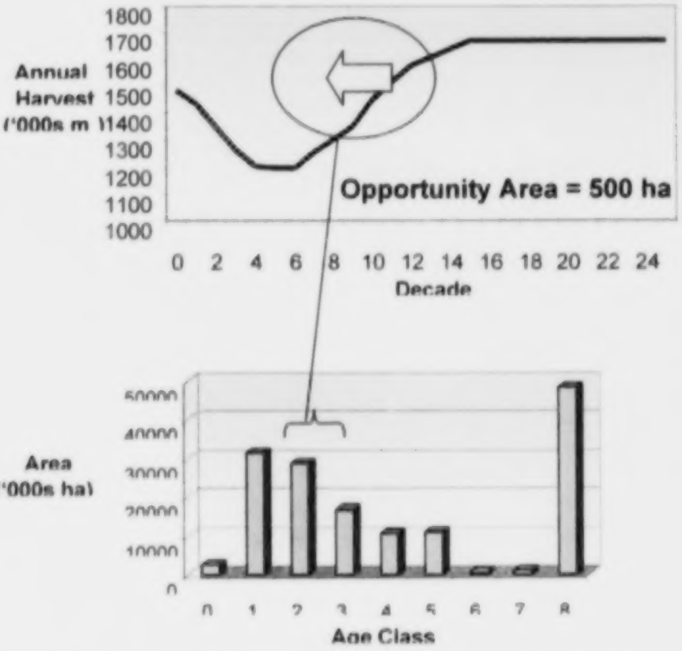
Long-term

Timber Volume	↑ THLB
Min. harvest age	
Quality	none
Biodiversity	none
Jobs	2 – 3 / ha
Cost	$1,800 – 2,300 / ha

Notes:

This option is similar to Canfor's program of aggressive road rehabilitation of non-strategic roads in TFL 37. The opportunity area relates to the effects of rehabilitation of future roads only. Discussion was about how most current roads were well built and required as assets for future management. Also that other treatments could achieve similar timber supply effects and be more cost-effective.

Conversion of Dr-Leading Stands



Screening Criteria

Ecosystems	S3, S4, (S1ha)
Structural Stage	YF (30-60 years)
Type (Spp comp)	Dr-coniferous
Volume (m3/ha)	>500
Access	<30km from town

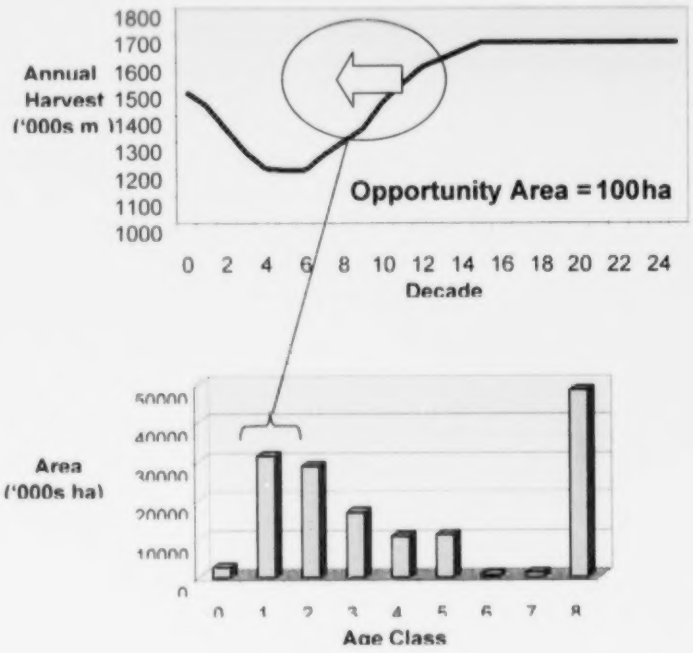
Treatment Details

Treatment Effects Short, Long-term

Timber Volume	↑ THLB
Min. harvest age	None
Quality	↑ Dr sawlogs currently more valuable than Hw.
Biodiversity	Riparian ↑ or ↓
Jobs	8 – 12 / ha
Cost	$200 - 1500 / ha

Notes:
The opportunity area is a conservative estimate based on stands which can be harvested at break-even or a profit and are not constrained by other resource values (primarily riparian habitat). The short-term treatment effect is based on recovering alder which is not considered part of the timber supply. The TSA estimates that a partitioned AAC of about 10,000 to 12,000 m3/year for alder could exist under the right market conditions. More accurate estimates of the opportunity area and potential alder AAC will be analyzed in the Type II report. The long-term treatment effect is bringing the harvested areas under management (for conifers or alder). The challenges to alder utilization are the same as those listed under "Establishment of Alder". However there is more urgency to find solutions to these problems as the majority of the alder in the inventory will start to become over-mature in the next 10 to 20 years.

Drainage of Low Productivity Sites



Screening Criteria

Ecosystems	S7, S6, (S5)
Structural Stage	Establishment
Slope/Terrain	<30%/No issues
Access	Road/<30km from settlement or log dump

Treatment Details

Treatment Effects Long-term

Timber Volume	None
Min. harvest age	↓
Quality	minor ↑
Biodiversity	None.
Jobs	4 –6 / ha
Cost	$2,000 – 3,000 / ha

Notes:

A small research trial was recently established to evaluate this treatment. The opportunity area is based on treating the portion of the annual area that is logged from the ecosystems listed in the screening criteria.

Other Potential Treatment Options

These additional treatment options were raised during the workshop.

- **Update Terrain Stability and Riparian Mapping.**
  These projects are not directly within the scope of an incremental silviculture strategy. However, it was noted that better mapping/inventories of these resources will allow constraints on timber supply to be minimized.

- **Verification of Wintipsy OAF1 and OAF2.**
  For existing managed stands the TSA used 10% for OAF1 and 5% for OAF2. It was suggested that these OAF's need verification for TFL 6 as the long-term timber supply may be sensitive to inaccuracies.

Summary of Potential Strategies by Response Time Frame

Following is a summary of the previous treatment options organized by response time frame (Short Term (1 to 20 years) = ST, Mid Term (21 – 70 years) = MT, and Long Term (71+ years) = LT).

Response Time Frame	Potential Treatment	Current Status	Anticipated Result	Harvest Forecast (000 000s m3/yr)
ST1	Fertilization at time of planting	All salal sites and some brush sites are treated.	About a 1 year reduction in regeneration delay.	Included in CMO.
ST2	Conversion of Dr-leading stands	As opportunities arise in conjunction with other harvesting	Short-term effect is increase in AAC.	Partitioned harvest of up to an additional 12,000 m3 / yr.
MT1	Juvenile Spacing	About 300 to 400 ha / year are treated to a residual density of 850 / sph	Reduction in harvest age based on an increase in average piece size and reduction in volume harvested / ha.	Treatment of 300 ha / yr is included in the current TSA (subject to the availability of suitable stands). An increase or decrease in the annual area treated may impact the AAC in the 2041 to 2060 "trough". The magnitude of the potential response needs to be evaluated.
MT2	Commercial Thinning	Nothing	A CT program starting in ~2030 could be used to increase the AAC in the 2041 to 2060 "trough".	If CT can be proved to be viable, the AAC could be increased by ~50,000m3 /year through the "trough".

Response Time Frame	Potential Treatment	Current Status	Anticipated Result	Harvest Forecast (000 000s m3/yr)
MT3	"Early Commercial Thinning	Nothing	Similar to juvenile spacing with very small short-term AAC gain.	Needs to be evaluated.
MT4	Establishment of Alder	Nothing	About 200 ha /yr could be treated. If started soon could be used to increase the AAC in the 2041 to 2060 "trough".	Needs to be evaluated.
MT5	Fertilization (Non – SCHIRP)	Minor areas of Fdc only	For non-Fd stands, requires on-going research. If fertilization response can be demonstrated, mid to late rotation treatments could have significant effects on AAC.	Nothing.
LT1	SCHIRP Fertilization	All cedar – salal sites are being treated in the Shrub-Herb to Pole-Sapling structural stages.	Research is ongoing but current results suggest long – term increases in productivity.	Included in CMO.
LT2	Reforestation with Genetically Improved Stock	Currently about 70 to 80% of planted trees are from first generation improved seed.	For first generation seed a 5% gain is conservatively forecasted. Second generation seed is expected to be available for Fd, Hw and Yc in 10 years and a 15% gain is conservatively forecasted for this seed. Further advances are expected within 20-30 years.	Included in CMO.
LT3	Road Rehabilitation	Currently on a forest – level permanent access occupancy (PAS) is estimated to be about 4%.	Reduction in PAS to 3% based on an aggressive program of rehabilitating non-strategic roads.	Needs to be evaluated.

Response Time Frame	Potential Treatment	Current Status	Anticipated Result	Harvest Forecast (000 000s m3/yr)
LT4	Conversion of Dr-leading stands	Nothing	Long-term effect is an increase in AAC by bringing additional un-managed area under intensive management sooner than is forecast.	Needs to be evaluated.
LT5	Drainage of Low Productivity Sites	Nothing	Increase in AAC by improving site productivity.	Needs to be evaluated.

Potential Harvest Forecast

Past silviculture (basic and intensive) efforts have and continue to soften the effects of recent harvesting restrictions. Past silviculture treatments are projected to have reduced the AAC reductions in the "trough" (~2021 to 2091 by about 8%).

According to the current TSA, future intensive silviculture treatments which are included in the CMO such as juvenile spacing, fertilization and tree improvement do not impact the timber supply until the long-term (ie: after ~2140). After this time future intensive treatments, of the magnitude assumed in the CMO, potentially account for between 5 and 20% of the projected AAC.

In addition to the treatments included in the CMO there are quantified opportunities to increase the short-term AAC by about 10,000 to 12,000 m3 and the mid-term AAC by about 50,000 m3.

Finally there are several treatments which have the potential to further increase the mid to long – term AAC. However, the impacts of these treatments on timber supply have not been quantified.

Opportunities to Improve Timber Quality

The effects of incremental silviculture on future timber quality were not analyzed in the current TSA. To identify one potential treatment option that primarily effects timber quality, the consultants used information from reviews of Management Plans 8 and 9. In addition the previously identified treatments which effect timber supply were all rated relative to their impacts on timber quality. Each of these treatment options was discussed at the workshop. Key points from the discussions are listed for each treatment.

Second Growth Product Objectives

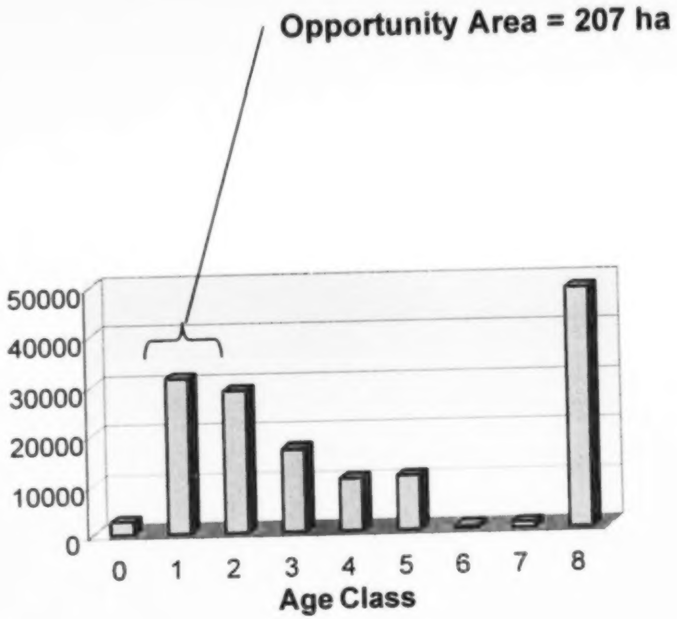
Aside from setting target average dbh's for harvest rotation ages, product objectives are not specified in Management Plans 8 or 9 and were not discussed at the workshop. Therefore as a starting point for further discussion the consultants have suggested some basic log specifications. It is expected that these will be refined in the initial stages of the Type 2 Strategic Silviculture Analysis for TFL 6.

Quality Class	Species	Characteristics
Premium Log	Hw-Ba, Ss, Fd	50+ cm dbh, with or without pruned 5.5m first log
	Dr	40+ cm dbh, with or without pruned 5.5m first log
Sawlog	All conifers	40+ cm dbh
	Dr	30+ cm dbh

Review of Potential Treatment Options

Following is the potential treatment option that primarily effects timber quality.

Pruning (Hw) 1st lift (3.5 m); 2nd lift (5.5)



Screening Criteria

Ecosystems	S13, S12, S3, (S1ha)
Structural Stage	PS [6-8m], [9-11m]
DBH (doms)	[,8cm], [dia @3.5m,8cm]
Type (Spp comp)	H, F, Ba
Density (crop trees)	spaced 800-850 sph
Slope/terrain	< 30% / no issues
Access	Road / < 50km from town

Treatment Details

Trees / ha	1st lift = 560 tallest trees/ha largest 2/3rds 2nd lift = 350 – 560 tallest previously-pruned trees /ha
Min % live crown length retained	Maintain 50% height for 1st lift and 1/3 for height for 2nd lift.

Treatment Effects

Mid-term

Timber Volume	None
Min. harvest age	None
Quality	↑ supply of clear
Biodiversity	Minor ↑ increases browse
Jobs	6 – 10 days / ha
Cost	1st lift: $ 1,300 - $ 2,200 / ha 2nd lift: $ 1,700 - $ 3,000 / ha

Notes:

Opportunity area reflects only areas that have not been pruned to the first lift.
WFP would like to experiment with pruning Ss, Cw, and Yc.

Other Potential Treatment Options

The consultants developed this treatment option after the workshop.

- **Diversification/Refinement of Species Mixes used in reforestation.**
  To improve future product diversification, aside from establishment of alder, it may be beneficial to reduce the use of Hw in reforestation. Primarily this involves managing for more Ss(weevil-resistant)Hw or SsBa mixes on the nutrient medium to rich sites and planting more Cw and/or Fd on the nutrient medium non-salal types. Fd should also continue to be used on other sites where ecologically appropriate.
  These are basic reforestation strategies that are not eligible for FRBC funding. These treatments are introduced to primarily address long-term timber quality. However these strategies will also effect long-term timber supply.

Summary of Potential Strategies by Response Time Frame

Following is a summary of the treatment options which effect timber quality organized by response time frame (Short Term (1 to 20 years) = ST, Mid Term (21 – 70 years) = MT, and Long Term (71+ years) = LT).

Response Time Frame	Potential Strategy / Action	Current Status	Anticipated Result
ST1	Conversion of Dr – leading stands	As noted under timber supply.	Increase in quality is through product diversification. In addition some clear lumber will be recovered.
MT1	Pruning	About 500 ha / year of spaced Hw have been pruned over the last 4 years. About 350 ha / year is planned for the next 5 years.	Increase clear recovery from the 1^{st} 5 m log. Pruning about 350 ha / year should yield, starting in the mid – term, >4% of the harvest in premium logs with some clear cuttings.
MT2	Juvenile Spacing / "Early" Commercial Thinning	As noted under timber supply.	Treatment selects the best trees/species as crop trees.
MT3	Commercial Thinning	As noted under timber supply.	Quality of thinnings will be low due to small size. Quality of final harvest will be improved as post-thinning growth will be on the best trees.
MT4	Establishment of Dr	As noted under timber supply.	Increase in quality is through product diversification. In addition some clear lumber will be recovered.
LT1	Diversification / Refinement of Species Mixes used in reforestation.	Ongoing	Reduction in the use of Hw in future reforestation. Primarily this involves managing for more Ss(weevil-resistant)Hw and SsBa mixes on the nutrient medium to rich sites and planting more Cw and/or Fd on the nutrient medium non-salal types.

Timber Quality Forecast

A timber quality forecast was not done as part of the TSA. In the short-term the harvest will be primarily from old growth stands which will yield some high quality clear cuttings. In the short-term there is an opportunity to harvest some alder which would provide some product diversification and some clear recovery.

In the mid to long-term as the harvest moves to second growth, it is expected that significant components of premium logs will be produced primarily because of the longer rotations which result from harvesting based on achievement of minimum dbh's. Figure 10 (from the Review of the Timber Supply Analysis Section) shows that average dbh harvested after 2040 is forecast to be steady at about 40 cm.

As a result of previous and future pruning, some coniferous premium logs with clear cuttings will be harvested starting in late mid-term.

Hw dominates the existing second growth inventory. There are opportunities to diversify the species mix used in reforestation that will impact mid to long-term timber quality.

Opportunities to Increase/Improve Habitat Supply

The effects of incremental silviculture on future timber quality were not analyzed in the TSA. Prior to the workshop the consultants did not identify treatment options designed specifically for habitat quality and/or supply. Instead the previously identified treatments which were developed to primarily effect timber supply or timber quality were all rated relative to their impacts on biodiversity. Limited discussion about habitat occurred during the workshop. Key points are noted with the treatment options in the timber supply and timber quality sections. One treatment option specifically designed for habitat was raised during the workshop.

Many of the treatments options which were identified to improve timber supply and quality can be modified to improve habitat. However, these modifications usually lead to a reduction in timber supply or timber quality effects. Specific treatment prescriptions may be designed and analyzed for identified habitat issues during the Type 2 Strategic Silviculture Analysis for TFL 6.

Other Potential Treatment Options

This treatment option was raised and discussed during the workshop.

- **Density management and conversion of Alder-leading stands in Riparian Management Zones.**

WFP is currently working in conjunction with the MOE to improve fish and riparian habitat by creating openings in mature alder and coniferous-leading stands. About 30 hectares per year are planned for treatment over the next 5 years.
These treatments are eligible for FRBC funding and are designed to improve long-term habitat. These treatments have no timber supply or quality effects.

Incremental Silviculture Strategy

This section synthesizes the preceding background information into an incremental silviculture strategy for the TFL.

General Strategy

Policies developed over the last two decades to ensure multi-resource sustainability limit the timber supply in the short to medium-term. Reductions in the amount of old forest available for harvest result in the annual allowable cut (AAC) being stepped down over the next 50 years. In the mid to long term, as more second growth becomes merchantable, the AAC slowly recovers until it reaches a long-term sustainable level higher than the current harvest rate.
The key opportunities for silviculture investments are applying treatments or strategies which minimize constraints on old stands, developing programs for harvesting stands not included in the timber harvesting landbase (THLB) and increasing the number of second growth stands which could be harvested in the 2020 to 2050 "trough".
Past silviculture (basic and intensive) efforts have lessened the effects of the medium-term reduction in the AAC. Many of the treatment options discussed in this report have been included in the Current Management Option (CMO) of the most recent timber supply analysis (TSA). Most of the additional suggested treatments are considered "experimental" and will require further study or research before they can be implemented. As a result funding for these studies is an important priority in the near future.
In the short-term there is an opportunity to harvest some alder which would diversify the log profile recovered from the TFL. In the mid to long-term as the harvest moves to second growth, it is expected that significant components of premium logs will be produced primarily because of the longer rotations which result from harvesting based on achievement of minimum dbh's. As a result of previous and future pruning, some premium logs with clear cuttings will be harvested starting in late mid-term.
Hw dominates the existing second growth inventory. There may be opportunities to diversify the species mix used in reforestation, which will impact mid to long-term timber quality.

Working Targets

WT1 (Quantity): In addition to the treatments included in the CMO there are quantified opportunities to increase the short-term AAC by about 10,000 to 12,000 m3 (alder conversion) and the mid-term AAC by about 50,000 m3 (commercial thinning).

WT1 (Quality): Quantified working targets have not been finalized for quality. An interim estimate is that pruning about 350 ha / year to 5 meters in height should yield, starting in the mid – term, >4% of the harvest in premium logs with some clear cuttings.

Second Growth Log Product Objectives

Log product quality objectives have not yet been finalized for TFL 6. As a starting point for further discussion the following basic log specifications are suggested.

Quality Class	Species	Characteristics
Premium Log	Hw-Ba, Ss, Fd	50+ cm dbh, with or without pruned 5.5m first log
	Dr	40+ cm dbh, with or without pruned 5.5m first log
Sawlog	All conifers	40+ cm dbh
	Dr	30+ cm dbh

Silviculture Strategies

Strategies to Increase the Quantity of Future Timber Supply

Short Term:	3. Reduce regeneration delay on salal sites by continuing to fertilize at the time of planting. 4. Increase the short-term AAC by harvesting alder.
Mid Term:	5. Reduce the minimum harvest age and thereby increase the AAC in the 2041 to 2060 "trough" by maintaining or increasing current spacing levels and modifying residual densities and/or, if viable, starting an "Early" commercial thinning program. 6. If commercial thinning can be proved to be viable, a program starting in about 2030 could be used to increase the AAC in the 2041 to 2060 "trough." 7. Increase the AAC in the 2041 to 2060 "trough" by looking at establishing alder plantations on ecologically-suitable currently harvested areas. 8. If non-SCHIRP fertilization response can be demonstrated, the mid-term AAC could be significantly increased by fertilization.
Long term:	6. Increase long-term AAC by continuing to aggressively fertilize and monitor treatment response under SCHIRP. 7. Reduce long-term minimum harvest ages by continuing to use genetically improved seed. 8. Increase the long-term AAC with an aggressive road rehabilitation program. 9. Increase the long-term AAC by converting un-managed alder-leading stands to managed coniferous stands. 10. Increase the long-term AAC by draining wet, low productivity sites.

Strategies to Increase the Quality of Future Timber Supply

Short Term:	2. Increase product diversification by harvesting alder.
Mid Term:	5. Increase mid-term clear recovery by continuing or increasing the current pruning program. 6. Improve mid-term sawlog quality by continuing or increasing current juvenile spacing levels and/or, if viable, starting an "Early" commercial thinning program. 7. If commercial thinning can be proved to be viable, a program starting in about 2030 could be used to increase the quality of the final harvest. 8. Increase product diversification and recover logs with some clear cuttings by growing alder.
Long Term:	2. Diversification / refinement of the species mixes used in reforestation can be used to diversify the mix of species harvested in the long-term.

Strategies to Increase the Quantity or Quality of Future Habitat Supply

Long Term:	2. Density management and conversion of alder-leading stands in riparian management zones to mixed to deciduous-coniferous stands will improve long-term fish and riparian habitat.

Silviculture Regimes and Investment Priorities

Incremental Silviculture Program

The following tables illustrate the results of an evaluation process to assess the rank or priority of specific silviculture treatment options and to develop an associated five-year program that supports attainment of the stated goals and objectives. This evaluation process was completed by the consultants and a representative of WFP following the workshop. Prior to this draft report being finalized changes may be required to the treatment ranking. For a depiction and description of the evaluation framework please refer to Appendix I.

Table 2 summarizes the actual and scaled impact of each treatment on the stated objectives (scaled data was obtained via questionnaire where actual data was unavailable). The net direct costs of each treatment and the relative importance of each objective are also noted. This information forms the basis of the ranking process described below.

Table 3 summarizes the weighted sum of all silviculture treatment benefits and highlights the cost/benefit ratio and corresponding rank associated with each treatment. This information flows directly from the preceding data. In order to assess the overall impact of each treatment relative to all others, all treatment effects on each objective are rolled up into a single weighted sum for each treatment (given the relative importance of each objective). (Please refer to Appendix I). The cost of each treatment is divided by its overall benefit in order to determine the cost effectiveness of each treatment relative to all others. The rank of the cost effectiveness of each treatment determines the order that they should be pursued when budget constraints are faced

Table 2: Data Framework

Data Framework	Timber Supply	Timber Quality	Wildlife Habitat & Biodiversity	Employment		Net Direct Cost
Incremental Treatment Options	Score / ha (-100 to 100)	Score / ha (-100 to 100)	Score / ha (-100 to 100)	Total Person days / ha	Implied Score/ha (-100 to 100)	Unit Cost $ / ha
MAIN						
Surveys				0.10		$ 25
Juvenile Spacing	100	100	100	6.50	87	$ 2,500
Pruning	0	75	30	7.50	100	$ 3,000
SCHIRP Fertilization	75	0	0	0.20	3	$ 600
Reforestation (GM stock)	65	0	0	0.10	1	$ 60
Fertilization at Planting	10	0	0	0.30	4	$ 200
Backlog Brushing	40	75	0	1	13	$ 700
Planning & Prescriptions				0.10		$ 40
EXPERIMENTAL						
Early Commercial Thinning (ECT)	10	50	100	10.00	100	$ 3,000
Commercial Thinning	50	50	100	10.00	100	$ 3,000
Establishing Alder	100	100	30	4.00	40	$ 2,000
Fertilization (Non-SCHIRP)	100	0	20	0.20	2	$ 550
Conversion of Deciduous Leading Stands	60	80	35	10.00	100	$ 1,500
Road Rehabilitation	40	0	10	2.70	27	$ 2,300
Drainage of Low Productivity Sites	70	0	25	4.50	45	$ 3,000
Objective Weight Score	70	20	70	100		
Implied Weight	27%	8%	27%	38%		

Table 3: Ranking Framework

Ranking Framework	Weighted Sum of Benefits		Cost / Benefit Ratio	
			Direct Cost *divided by* Sum of Benefits	
Incremental Treatment Options	Total Weighted Score (unitless)	Rank (within Main and Experimental Separately)	$ / Unit Score	Rank (within Main and Experimental Separately)
MAIN				
Juvenile Spacing	95	1	$ 26	2
Pruning	52	2	$ 57	6
SCHIRP Fertilization	21	4	$ 28	3
Reforestation (GM stock)	18	5	$ 3	1
Fertilization at Planting	4	6	$ 47	5
Backlog Brushing	22	3	$ 32	4
EXPERIMENTAL				
Early Commercial Thinning (ECT)	72	2	$ 42	5
Commercial Thinning	83	1	$ 36	4
Establishing Alder	58	4	$ 34	3
Fertilization (Non-SCHIRP)	33	6	$ 17	1
Conversion of Deciduous Leading Stands	70	3	$ 21	2
Road Rehabilitation	24	7	$ 96	7
Drainage of Low Productivity Sites	43	5	$ 70	6

Table 4 summarizes the opportunity areas associated with each treatment.

Table 4: Opportunity Area

Opportunity Area	Hectares			
Incremental Treatment Options	Total Currently Available	Average / Year for Next Five Years	Low Estimate / Year for next 5 years	High Estimate / Year for next 5 years
MAIN				
Juvenile Spacing	3,000	**250**	150	700
Pruning	500	**350**	200	450
SCHIRP Fertilization	2,700	**1,000**	800	1,200
Reforestation (GM stock)	n/a	900	800	1,000
Fertilization at Planting	n/a	350	300	400
Backlog Brushing	1,500	**300**	100	600

▨ based primarily on SH2 tables from WFP

EXPERIMENTAL				
Early Commercial Thinning (ECT)	3,000	600		
Commercial Thinning	5,000	1,000		
Establishing Alder	n/a	200	150	300
Fertilization (Non-SCHIRP)	25,000	5,000		
Conversion of Deciduous Leading Stands	500	100		
Road Rehabilitation	750	150		
Drainage of Low Productivity Sites	50	10		

Development of a Five-year Incremental Silviculture Plan

Table 5 depicts a 5-year tactical plan that will support achievement of the stated goals and objectives. This plan entails the use of all main treatment options over all opportunity areas specified in Table 4. This plan falls within the bounds of the FRBC funding allotment determined in the WFP 2001/2002 SH RMP.[1]

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[1] Exact totals will differ given that some stand tending and survey activities noted in the 2001/2002 RMP are not considered here.

Table 5: Five-year Silviculture Investment Plan

5-Year Program	Total Hectares					Unit Cost	Total Cost ($'000's)				
			Year						Year		
Incremental Treatment Options	1	2	3	4	5	$ / ha	1	2	3	4	5
MAIN											
Surveys	3,150	3,150	3,150	3,150	3,150	$ 25	$ 79	$ 79	$ 79	$ 79	$ 79
Juvenile Spacing	250	250	250	250	250	$ 2,500	$ 625	$ 625	$ 625	$ 625	$ 625
Pruning	350	350	350	350	350	$ 3,000	$1,050	$1,050	$1,050	$1,050	$1,050
SCHIRP Fertilization	1,000	1,000	1,000	1,000	1,000	$ 600	$ 600	$ 600	$ 600	$ 600	$ 600
Reforestation (GM stock)	900	900	900	900	900	$ 60	$ 54	$ 54	$ 54	$ 54	$ 54
Fertilization at Planting	350	350	350	350	350	$ 200	$ 70	$ 70	$ 70	$ 70	$ 70
Backlog Brushing	300	300	300	300	300	$ 700	$ 210	$ 210	$ 210	$ 210	$ 210
Planning & Prescriptions	3,150	3,150	3,150	3,150	3,150	$ 40	$ 126	$ 126	$ 126	$ 126	$ 126
Riparian Habitat Supply	30	35	35	35	35	$ 2500	$ 2500	$ 2500	$ 2500	$ 2500	$ 2500
EXPERIMENTAL											
Early Commercial Thinning (ECT)	Under study / consideration					$ 3,000					
Commercial Thinning						$ 3,000					
Establishing Alder						$ 2,000					
Fertilization (Non-SCHIRP)						$ 550					
Conversion of Deciduous Leading Stands						$ 1,500					
Road Rehabilitation						$ 2,300					
Drainage of Low Productivity Sites						$ 3,000					
STUDIES (SCHIRP, windthrow)							$ 200	$ 200	$ 200	$ 200	$ 200
Total ($'000's) (1)							$3,014	$3,014	$3,014	$3,014	$3,014
Total FRBC Funded Treatments Only ($'000's) (2)							$2,809	$2,809	$2,809	$2,809	$2,809

▨ Shaded treatments are not eligible for FRBC funding

(1) Total does not include other stand tending activities, such as Habitat Supply and Biodiversity Enhancement

(2) Ineligible treatment and associated survey costs are netted off this total

Job Outcomes

Table 6 highlights the anticipated job outcomes over the course of the 5-year program specified above.

Table 6: Job Outcomes

Job Outcomes	Person Days / ha	Person Years (1)				
		Year				
Incremental Treatment Options		1	2	3	4	5
MAIN						
Surveys	0.10	2	2	2	2	2
Juvenile Spacing	6.50	9	9	9	9	9
Pruning	7.50	15	15	15	15	15
SCHIRP Fertilization	0.20	1	1	1	1	1
Reforestation (GM stock)	0.10	1	1	1	1	1
Fertilization at Planting	0.30	1	1	1	1	1
Backlog Brushing	1.00	2	2	2	2	2
Planning & Prescriptions (2)	0.10	2	2	2	2	2
EXPERIMENTAL						
Early Commercial Thinning (ECT)	10.00	Under study / consideration				
Commercial Thinning	10.00					
Establishing Alder	4.00					
Fertilization (Non-SCHIRP)	0.20					
Conversion of Deciduous Leading Stands	10.00					
Road Rehabilitation	2.70					
Drainage of Low Productivity Sites	4.50					
Total (person years)		31	31	31	31	31

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(1) Assumes that 1 person year of employment equals 180 person days of work.

References

B.C. Ministry of Forests. 1998b. *Vancouver Region Incremental Silviculture Objectives.* Handout. Vancouver Forest Region, Nanaimo, British Columbia.

Western Forest Products Ltd. 1995. *Management Plan No. 8 for TFL6.* Vancouver, British Columbia.

________. 1999. *Timber Supply Analysis Information Package in preparation of Management Plan 9 for TFL 6.* Vancouver, British Columbia.

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________. 2000. *TFL 6 1999 Annual Report.* Vancouver, British Columbia.

APPENDIX I

Depiction of the Evaluation Framework

DEPICTION OF THE EVALUATION FRAMEWORK

Obtain information on the relative performance of each treatment under each objective

Information From Questionnaire	Information From Other Sources

	Objectives				
	Benefits				Cost
Treatments	Timber Supply Score 0-100 /ha	Timber Quality Score 0-100 /ha	Habitat / Biodiversity Score 0-100 /ha	Employment PD / ha	$ / ha
treatment 1	100	80	100	3	$ 20
treatment 2	50	20	20	8	$ 25
treatment 3	40	100	80	10	$ 50

Weight the relative importance of each objective

Objectives	Score 0 to 100	Implied Weight of Objectives
Timber Supply	100	53%
Timber Quality	50	26%
Hab / BioD	10	5%
Employment	30	16%

Align the information in an evaluation framework

- - - - -

Obtain the Weighted Sum of Benefits for each treatment

	Objectives				
	Benefits				Cost
Treatments	Timber Supply Score 0-100 /ha	Timber Quality Score 0-100 /ha	Habitat / Biodiversity Score 0-100 /ha	Employment Implied Score 0-100 / ha	$ / ha
treatment 1	100	80	100	30	$ 20
treatment 2	50	20	20	80	$ 25
treatment 3	40	100	80	100	$ 50

Weight of Objective	53%	26%	5%	16%

	Weighted Sum of Benefits For each treatment: Score*Weight (Benefit 1) + Score*Weight (Benefit 2) + Score*Weight (Benefit 3) + Score*Weight (Benefit 4)	Cost $ / ha
treatment 1	84	$ 20
treatment 2	45	$ 25
treatment 3	67	$ 50

Obtain the Cost per Unit of Benefit (Cost-Benefit Ratio) and Rank the Treatments

	Cost per Unit of Benefit (Cost/Benefit Ratio) (Cost divided by Weighted Benefit Score)	**Treatment Rank**
treatment 1	$ 0.24	1
treatment 2	$ 0.55	2
treatment 3	$ 0.74	3

Comments

Notice that the rank based on the cost / benefit ratio differs from the rank of the treatments if you based the ranking solely on the weighted sum of the benefits.

That is: The weighted benefits of Treatment 3 are greater than those for Treatment 2 and thus Treatment 3 would rank higher than Treatment 2 if ranked based on Benefits only. However, Treatment 2 ranks higher than Treatment 3 in terms of Cost/Benefit after accounting for the fact that Treatment 3 is twice as expensive as Treatment 2.

Quite possibly, all treatments could be pursued if they came within budget , but in this framework the order they should be pursued until budget constraints are met is their rank order based on the cost/benefit ratio.

DEPICTION OF THE EVALUATION FRAMEWORK

Obtain information on the relative performance of each treatment under each objective

	Information From Questionnaire			Information From Other Sources	
	Objectives				
	Benefits				Cost
Treatments	Timber Supply Score 0-100 /ha	Timber Quality Score 0-100 /ha	Habitat / Biodiversity Score 0-100 /ha	Employment PD / ha	$ / ha
treatment 1	100	80	100	3	$ 20
treatment 2	50	20	20	8	$ 25
treatment 3	40	100	80	10	$ 50

Weight the relative importance of each objective

Objectives	Score 0 to 100	Implied Weight of Objectives
Timber Supply	100	53%
Timber Quality	50	26%
Hab / BioD	10	5%
Employment	30	16%

Migrate the information to an evaluation framework. Obtain the Weighted Sum of Benefits for each treatment

	Objectives				
	Benefits				Cost
Treatments	Timber Supply Score 0-100 /ha	Timber Quality Score 0-100 /ha	Habitat / Biodiversity Score 0-100 /ha	Employment Implied Score 0-100 / ha	$ / ha
treatment 1	100	80	100	30	$ 20
treatment 2	50	20	20	80	$ 25
treatment 3	40	100	80	100	$ 50

Weight of Objective	53%	26%	5%	16%

	Weighted Sum of Benefits For each treatment Score*Weight (Benefit 1) + Score*Weight (Benefit 2) + Score*Weight (Benefit 3) + Score*Weight (Benefit 4)	Cost $ / ha
treatment 1	84	$ 20
treatment 2	45	$ 25
treatment 3	67	$ 50

Obtain the Cost per Unit of Benefit (Cost-Benefit Ratio) and Rank the Treatments

	Cost per Unit of Benefit (Cost/Benefit Ratio) (Cost divided by Weighted Benefit Score)	**Treatment Rank**
treatment 1	$ 0.24	1
treatment 2	$ 0.55	2
treatment 3	$ 0.74	3

Comments

Notice that the rank based on the cost / benefit ratio differs from the rank of the treatments if you based the ranking solely on the weighted sum of the benefits.

That is: The weighted benefits of Treatment 3 are greater than those for Treatment 2 and thus Treatment 3 would rank higher than Treatment 2 if ranked based on Benefits only. However, Treatment 2 ranks higher than Treatment 3 in terms of Cost/Benefit after accounting for the fact that Treatment 3 is twice as expensive as Treatment 2.

Quite possibly, all treatments could be pursued if they came within budget , but in this framework the order they should be pursued until budget constraints are met is their rank order based on the cost/benefit ratio.

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** TFL 6 - Western Forest Products Limited

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

TFL 6 - Western Forest Products Limited
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Stand Tending								
Surveys	1650	1275	2000	1300	2100	30.00	49500	1
Spacing	220	220	235	235	235	2500.00	550000	2
Pruning	320	320	340	300	300	3000.00	960000	2
Fertilizing	850	750	1300	750	1400	600.00	510000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	3040	2565	3875	2585	4035	680.76	2,069,500	
Planning and prescriptions							45,600	1
Total dollars							2,115,100	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	50	50	40	40	30	3,000.00	150000	1
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	50	50	40	40	30	2,999.94	150,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	1650	1275	2000	1300	2100	30.00	49,500	
Spacing	220	220	235	235	235	2,499.99	550,000	
Pruning	320	320	340	300	300	2,999.99	960,000	
Fertilizing	850	750	1,300	750	1,400	600.00	510,000	
Other stand tending activities	50	50	40	40	30	2,999.76	150000	
Totals hectares	3090	2565	3875	2585	4035	718.28	2,219,500	
Planning and prescriptions							45,600	
Studies funding							0	
Total dollars							2,265,100	

1/4/2006

TFL 6 - Western Forest Products Limited
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	320	270	270	120	120	30.00	9600	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	320	270	270	120	120	30.00	9,600	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							9,600	
Impeded areas								
Surveys	785	715	615	400	300	30.00	23550	1
Brushing	455	395	295	185	185	600.00	273000	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1240	1110	910	585	485	239.15	296,550	
Prescriptions and planning dollars							18,600	1
Total impeded areas							315,150	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	1105	985	885	520	420	30.00	33150	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	455	395	295	185	185	600.00	273000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1560	1380	1180	705	605	196.25	306150	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							18,600	
Recommended studies							0	
Total backlog program							324,750	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

TFL 6 - Western Forest Products Limited
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.

The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3) Estimates of annual growth rate increase from each type of treatment over no treatment. **Potential volume/ha gain (m3/ha/yr) provincial factors:**	0.77	0	0	0	2.9	0.41	0.25	0	0.46	
Years the factor will affect:	0	90	65	90	90	85	70	70	80	
2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%. **Provincial factors for estimated value gain at harvest**							5-15%	15-30%	1-5%	
3) Corporate commitment to employment Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare. **Est. short term employment rate (person days/ha) provincial factors:**	0.1	0.34	0.1	0.95	2	2	5	6	0.2	0.1

Area affected by tree improvement, seedling production and silviculture surveys

Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	**Nursery Seedling Production**	**Silviculture Surveys**
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	0		
Enter area of all other sites planted with improved trees	1,300		
Total area affected by tree improvement	1,300		
B Nursery production of seedlings			
Enter sowing requests from SPAR		1,000,000	
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			1,650
Total backlog surveys from the backlog table.			1,105
33% of all silviculture surveys			909
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			1,200
Estimate area of free growing surveys			500
Estimate area of pre-stand tending surveys			1,650
Estimate of total surveys that will affect timber supply			(A) 3,350
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			3,350
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			0
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			320

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity. 300

TFL 6 - Western Forest Products Limited
Performance Measures Based on Activities Planned for 2002/2003
Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improve-ment	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	1,300	1,000,000	3,350	0	0	455	220	320	850	1,006,545	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	90	65	90	90	85	70	70	80		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	1	15,857	3,850	0	31,385		51,093
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			320								320
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2	5	6	0.2	0.1	
3.2	Estimated total employment (person days/year)	130	340,000	335	0	0	910	1,100	1,920	170	100,655	
3.3	Estimated total full time equivalent positions (FTE)	1	1,889	2	0	0	5	6	11	1	559	2,473
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											50
5.3	Est. area with secondary value provided to biodiversity (ha)											300

TFL 6 - Western Forest Products Limited
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	3,090	2,565	3,875	2,585	4,035	718	2,219,500
Planning, prescriptions and seedlings							45,600
Backlog Program Field Activities	1,560	1,380	1,180	705	605	196	306,150
Planning, prescriptions and seedlings							18,600
Totals	4,650	3,945	5,055	3,290	4,640		2,589,850

Performance Measures

Potential total merchentable volume increment in 65 years	51,093 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	320 ha
Estimated total full time equivalent positions generated	2,473 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	50 ha
Estimated area with secondary value provided to biodiversity	300 ha

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): TFL 6

Stand Tending	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)**
Surveys	1900	1650	-13.2	H	1	33	30	-9.1	
Spacing	250	220	-12.0	M	2	1980	2500	26.3	Costs are based on actuals from previous years and reflect conditions on Northern Vancouver Island
Pruning	450	320	-28.9	M	2	2420	3000	24.0	As above
Fertilizing	1200	850	-29.2	H	1	330	600	81.8	As above. Also, we fertilize to "SCHIRP" specs (P applied in addition to N)

Forest Health	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)**
Spacing	0	0	#DIV/0!	0	0	1980	n/a	#VALUE!	
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Habitat Supply/ Biodiversity									
Riparian	35	50	42.9	H	1	3000	3000	0.0	WFP would like to complete the Keogh project this year, and 50 ha would do it
Non-Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): **TFL 6**

	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Legal Obligation									
Surveys	0	0	#DIV/0!	0	0	33	0	-100.0	
Site preparation	0	0	#DIV/0!	0	0	1650	0	-100.0	
Planting	0	0	#DIV/0!	0	0	1320	0	-100.0	
Brushing	0	0	#DIV/0!	0	0	1155	0	-100.0	
B/L Reforestation									
Surveys	400	320	-20	H	1	33	30	-9.1	
Site Prep	0	0	#DIV/0!	0	0	1650	0	-100.0	
Planting	0	0	#DIV/0!	0	0	1320	0	-100.0	
Brushing	0	0	#DIV/0!	0	0	1155	0	-100.0	

	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Impeded									
Surveys	800	785	-1.875	H	1	33	30	-9.1	
brushing	400	455	13.75	H	1	1155	600	-48.1	
Site Resoration									
Fill planting	0	0	#DIV/0!	0	0	1320	0	-100.0	
Rehab	5	0	-100	H	0	2200	0	-100.0	
Reforestation	10	0	-100	H	0	1320	0	-100.0	

Evaluation Rating of TFL 6 Sustainable Harvest RMP

Category	yes	partly	no	Rating (H, M, L)
Submitted by June 27 (TFL) or July 16 (TSA).		✓		M
Basic data for TFL provided, area, current AAC, current harvest forecast, site/age class species profile. Long Run Sustainable Yield stated.	✓			H
History of past treatments provided.	✓			H
Text submitted identifying backlog and enhanced forestry program issues.	✓			H
Opportunities to increase timber supply addressed in text, e.g. short/mid/long-term, timber flow benefits. Consistent with Type 1 or 2 Analysis.	✓			H
Opportunities to increase timber value addressed in text, if none so stated. Consistent with Type 1 or 2 Analysis.	✓			H
Opportunities to increase habitat supply/biodiversity addressed in text, if none so stated. Consistent with Type 1 or 2 Analysis.	✓			H
Working targets proposed for volume/value/habitat.	✓			H
Satisfactory treatment regime table provided.	✓			H
Satisfactory rationale provided for the priority ranking of activities i.e. link to MP ,TSR, other . Consistent with Type 1 or 2 Analysis.	✓			H
Where habitat supply/biodiversity activity indicated, rationale on why the silviculture treatment specifically maintains the non-timber values.		✓		M
All summary tables submitted satisfactorily.	✓			H
Projected job outcome of proposed program stated.	✓			Mod (# jobs is in performance measures)
Opportunities to achieve FRBC performance goals	✓			H
Is program within reasonable range of last year's SH RMP projections for year 2002/03.		✓		H -SU, +BR, -JS, -PR, - FE, +Riparian habitat
Plan Comparison Table submitted with explanation for variations.	✓			M (some changes not addressed)
Performance measures,...where TFL used local factors supporting rationale provided.	N/A			
SH study form completed satisfactorily	N/A			
Communication log documents partnership group and stakeholder discussions and issues.			✓	L
Other (describe) Text on submitted disc (Type 1 Analysis provided)	✓			H
Overall rating	n/a	n/a	n/a	H

WEYERHAEUSER COMPANY LIMITED

Tree Farm Licence 39

Sustainable Harvest RMP for 2002/2003

June, 2001

Prepared by:

Renewal Investment Corp.
Suite 3, 730 – 13th Avenue
Campbell River, BC
V9W 4H1

(250) 286-3323

Weyerhaeuser Company Limited
Sustainable Harvest RMP 2002/2003
TFL 39

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Executive Summary

This report describes a Type 2 timber supply analysis of incremental silviculture opportunities in TFL 39, held by Weyerhaeuser Company Ltd. The analysis uses the Forest Service Simulator (FSSIM) to assess interactions between silviculture and timber supply. The analysis assumes static, current conditions for relative timber values and social use of the forest.

The analysis inspects a broad range of incremental silviculture treatments, as identified at two workshops held with Forest Renewal BC, Ministry of Forests and Weyerhaeuser foresters. Specific treatments and treatment combinations (regimes) are tested for their ability to meet timber quality, harvest level, and wildlife habitat objectives. Some treatments are found to have negative impacts, while others are substantially positive. Table 9 provides a ranking of the treatment alternatives.

The analysis demonstrates that if all identified suitable forest areas were treated according to discussions at the workshop and corresponding assumptions in the analysis, \$16.1 million might be spent annually in TFL 39 on incremental silviculture activities. From among these candidate investments, a recommended silviculture program with a budget of \$3.8 million is presented in Table 11. This budget level is a 25% increase from recent silviculture levels in TFL 39.

Investment of \$3.8 million will increase future harvest levels by 3.4%, or 114,000 m^3/yr. The investment will also improve visual scenery values. Approximately 15% of the budget is allocated to wildlife habitat restoration. Incremental silviculture activities will directly create an estimated 35 full time equivalent jobs. Increased harvest levels will result in 210 direct and indirect jobs within 20 years and 480 jobs in the longer term. Including income taxes and stumpage fees, government will realize a return of \$7.8 million from the investment.

There are many uncertainties inherent in such an analysis, including stand responses to silviculture, selection of appropriate treatment areas, and economic assumptions projected over long time horizons. The analysis attempts to make reasonable estimates within the scope of the existing information.

Weyerhaeuser Company Limited, TFL 39
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on Type 1, Type 2 silviculture strategy & Provincial Default Values

The following default provincial factors may be replaced by management unit specific factors.

The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.71	0	0	0	2.9	0.63	0	0	0.42	
Years the factor will affect:	65	65	65	65	65	65	65	65	65	
Provincial factors for estimated value gain at harvest							5-15%	15%	5%	
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	1.5	2	2.43	4.14	5.5	0.18	0.1

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** TFL 39 - Weyerhaeuser Company Ltd.

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

TFL 39 - Weyerhaeuser Company Ltd.
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Stand Tending								
Surveys	5530	5480	5480	5480	5480	34.38	190125	1&2
Spacing	415	465	465	465	465	1913.98	794300	2
Pruning	60	60	60	60	60	2433.29	146000	3
Fertilizing	2250	2250	2250	2250	2250	380.67	856500	1
Other	15	15	15	15	15	5331.91	80000	1
Totals hectares	8270	8270	8270	8270	8270	249.93	2,066,925	
Planning and prescriptions	0	0	0	0	0		91500	1&2
Total dollars							2,158,425	
Forest Health Enhancement								
Spacing	50	50	50	50	50	1,799.86	90000	2
Pruning	50	50	50	50	50	2,419.81	121000	2
Other treatments	500	500	500	500	500	50.00	25000	2
Totals hectares	600	600	600	600	600	393.33	236,000	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	280	185	90	90	90	3,000.00	840000	1
Non-riparian treatments	0	95	150	150	150	0.00	0	
Totals hectares	280	280	240	240	240	2,999.95	840,000	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	5530	5480	5480	5480	5480	34.38	190,125	
Spacing	465	515	515	515	515	1,901.70	884,300	
Pruning	110	110	110	110	110	2,427.16	267,000	
Fertilizing	2250	2,250	2,250	2,250	2,250	380.67	856,500	
Other stand tending activities	795	795	755	755	755	1,188.65	945000	
Totals hectares	9150	8355	8355	8355	8355	343.49	3,142,925	
Planning and prescriptions							91,500	
Studies funding	Fert Regimes $28k, B/H Budworm $50k, Deer Browse $10k						88000	1&2
Total dollars							3,322,425	

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TFL 39 - Block 1 - Sunshine Coast District
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Stand Tending								
Surveys	950	950	950	950	950	37.50	35625	1
Spacing	50	50	50	50	50	1980.00	99000	2
Pruning	20	20	20	20	20	2420.00	48400	3
Fertilizing	500	500	500	500	500	330.00	165000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	1520	1520	1520	1520	1520	228.96	348,025	
Planning and prescriptions							7,500	1
Total dollars							355,525	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0
Pruning	0	0	0	0	0	0.00	0
Other treatments	0	0	0	0	0	0.00	0
Totals hectares	0	0	0	0	0	0.00	0

Habitat Supply and Biodiversity Enhancement

Riparian treatments	40	40	40	40	40	3,000.00	120000	1
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	40	40	40	40	40	2,999.93	120,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0

Enhanced Forestry Activities - Management Unit Total

Surveys	950	950	950	950	950	37.50	35,625
Spacing	50	50	50	50	50	1,979.96	99,000
Pruning	20	20	20	20	20	2,419.88	48,400
Fertilizing	500	500	500	500	500	330.00	165,000
Other stand tending activities	40	40	40	40	40	2,999.70	120000
Totals hectares	1560	1520	1520	1520	1520	300.01	468,025
Planning and prescriptions							7,500
Studies funding							0
Total dollars							475,525

1/4/2006

TFL 39 - Blocks 2&5 - Campbell River District
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	3200	3200	3200	3200	3200	33.00	105600	1
Spacing	185	185	185	185	185	1980.00	366300	2
Pruning	20	20	20	20	20	2420.00	48400	3
Fertilizing	1300	1300	1300	1300	1300	330.00	429000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	4705	4705	4705	4705	4705	201.76	949,300	
Planning and prescriptions							60,000	1
Total dollars							1,009,300	
Forest Health Enhancement								
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	120	45	0	0	0	3,000.00	360000	1
Non-riparian treatments	0	75	120	120	120	0.00	0	
Totals hectares	120	120	120	120	120	2,999.98	360,000	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	3200	3200	3200	3200	3200	33.00	105,600	
Spacing	185	185	185	185	185	1,979.99	366,300	
Pruning	20	20	20	20	20	2,419.88	48,400	
Fertilizing	1300	1,300	1,300	1,300	1,300	330.00	429,000	
Other stand tending activities	120	120	120	120	120	2,999.90	360000	
Totals hectares	4825	4705	4705	4705	4705	271.36	1,309,300	
Planning and prescriptions							60,000	
Studies funding	Fertilization Regimes						28000	1
Total dollars							1,397,300	

TFL 39 - Blocks 3&4 - Port McNeill District
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1000	1000	1000	1000	1000	33.00	33000	1
Spacing	60	60	60	60	60	1650.00	99000	2
Pruning	10	10	10	10	10	2420.00	24200	3
Fertilizing	350	350	350	350	350	550.00	192500	1
Other	15	15	15	15	15	5333.33	80,000	1
Totals hectares	1435	1435	1435	1435	1435	298.75	428,700	
Planning and prescriptions							20,000	1
Total dollars							448,700	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	30	10	0	0	0	3,000.00	90000	1
Non-riparian treatments	0	20	30	30	30	0.00	0	
Totals hectares	30	30	30	30	30	2,999.90	90,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	1000	1000	1000	1000	1000	33.00	33,000	
Spacing	60	60	60	60	60	1,649.97	99,000	
Pruning	10	10	10	10	10	2,419.76	24,200	
Fertilizing	350	350	350	350	350	550.00	192,500	
Other stand tending activities	45	45	45	45	45	3,777.53	170000	
Totals hectares	1465	1420	1420	1420	1420	354.06	518,700	
Planning and prescriptions							20,000	
Studies funding							0	
Total dollars							538,700	

1/4/2006

TFL 39 - Block 7 - Mid Coast District
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities

Stand Tending

	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	80	80	80	80	80	75.00	6000	2
Spacing	20	20	20	20	20	2500.00	50000	2
Pruning	10	10	10	10	10	2500.00	25000	3
Fertilizing	0	0	0	0	0	0.00	0	
Other	0	0	0	0	0	0.00	0	
Totals hectares	110	110	110	110	110	736.35	81,000	
Planning and prescriptions							4,000	2
Total dollars							85,000	

Forest Health Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Riparian treatments	10	10	10	10	10	3,000.00	30000	1
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	10	10	10	10	10	2,999.70	30,000	

Domestic Range

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	80	80	80	80	80	75.00	6,000	
Spacing	20	20	20	20	20	2,499.88	50,000	
Pruning	10	10	10	10	10	2,499.75	25,000	
Fertilizing	0	0	0	0	0	0.00	0	
Other stand tending activities	10	10	10	10	10	2,998.80	30000	
Totals hectares	120	110	110	110	110	924.95	111,000	
Planning and prescriptions							4,000	
Studies funding							0	
Total dollars							115,000	

TFL 39 - Block 6 - Queen Charlottes District
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	300	250	250	250	250	33.00	9900	1
Spacing	100	150	150	150	150	1800.00	180000	2
Pruning	0	0	0	0	0	0.00	0	
Fertilizing	100	100	100	100	100	700.00	70000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	500	500	500	500	500	519.80	259,900	
Planning and prescriptions							0	
Total dollars							259,900	

Forest Health Enhancement

Spacing	50	50	50	50	50	1,800.00	90000	2
Pruning	50	50	50	50	50	2,420.00	121000	2
Other treatments	500	500	500	500	500	50.00	25000	2
Totals hectares	600	600	600	600	600	393.33	236,000	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	80	80	40	40	40	3,000.00	240000	1
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	80	80	40	40	40	2,999.96	240,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	300	250	250	250	250	33.00	9,900	
Spacing	150	200	200	200	200	1,800.00	270,000	
Pruning	50	50	50	50	50	2,419.95	121,000	
Fertilizing	100	100	100	100	100	700.00	70,000	
Other stand tending activities	580	580	540	540	540	456.89	265000	
Totals hectares	1180	600	600	600	600	623.64	735,900	
Planning and prescriptions							0	
Studies funding	(Blackheaded Budworm $50K, Deer Browse $10K)						60000	2
Total dollars							795,900	

TFL 39 - Weyerhaeuser Company Ltd.
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	189	136	96	96	76	48.47	9161	1
Site preparation	5	5	5	5	5	1,648.68	8250	1
Planting	23	20	0	0	0	1,911.06	43960	1
Brushing	56	30	46	20	0	1,150.81	64449	1
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	273	191	147	121	81	460.85	125,820	
Seed purchase	15600	12000	0	0	0	0.50	7800	1
Total legal obligations							133,620	
Backlog Reforestation								
Surveys	4450	1900	1200	1200	1200	36.07	160500	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	70	70	50	50	60	1,805.69	126400	1
Brushing	540	525	155	150	150	1,196.66	646200	1
Totals hectares	5060	2495	1405	1400	1410	184.41	933,100	
Seed purchase	48000	36000	30000	30000	30000	0.56	27000	1
Prescriptions and planning dollars							30500	1
Total backlog reforestation							990,600	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	30	30	30	30	30	1,154.88	34650	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	30	30	30	30	30	1,154.50	34,650	1
Prescriptions and planning dollars							3500	
Total impeded areas							38,150	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	20	20	10	0	0	2,199.56	44000	1
Reforestation	20	20	20	20	20	1,319.74	26400	2
Totals hectares	40	40	30	20	20	1,759.43	70,400	
Seed purchase	18000	12000	12000	12000	12000	0.50	9000	2
Prescriptions and planning dollars							5000	1
Total site restoration							84,400	
Backlog Program Activities - Management Unit Total								
Surveys	4639	2036	1296	1296	1276	36.57	169661	
Site preparation	25	25	15	5	5	2,088.91	52250	
Planting	113	110	70	70	80	1,741.04	196760	
Brushing	626	585	231	200	180	1,190.56	745299	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	5403	2756	1612	1571	1541	215.43	1163970	
Seed purchase	81600	60000	42000	42000	42000	0.54	43800	
Prescriptions and planning							39,000	
Recommended studies	Retubing Study $20k QCI						20000	2
Total backlog program							1,266,770	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

TFL39 - Block 1 - Sunshine Coast District
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	50	10	20	20	0	75.00	3750	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	3	0	0	0	0	1,320.00	3960	1
Brushing	30	30	20	20	0	1,155.00	34650	1
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	83	40	40	40	0	510.35	42,360	
Seed purchase	3600	0	0	0	0	0.50	1800	
Total legal obligations							44,160	
Backlog Reforestation								
Surveys	450	250	0	0	0	40.00	18000	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	10	10	0	0	10	1,320.00	13200	1
Brushing	40	20	0	0	0	1,155.00	46200	1
Totals hectares	500	280	0	0	10	154.80	77,400	
Seed purchase	12000	0	0	0	0	0.50	6,000	
Prescriptions and planning dollars							6,000	1
Total backlog reforestation							89,400	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	20	20	10	0	0	2,200.00	44000	1
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	20	20	10	0	0	2,199.78	44,000	
Seed purchase	6,000	0	0	0	0	0.50	3,000	
Prescriptions and planning dollars							5,000	1
Total site restoration							52,000	
Backlog Program Activities - Management Unit Total								
Surveys	500	260	20	20	0	43.50	21750	
Site preparation	20	20	10	0	0	2,199.78	44000	
Planting	13	10	0	0	10	1,319.80	17160	
Brushing	70	50	20	20	0	1,154.98	80850	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	603	340	50	40	10	271.57	163760	
Seed purchase	21600	0	0	0	0	0.50	10800	
Prescriptions and planning							11,000	
Recommended studies							0	
Total backlog program							185,560	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

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TFL39 - Blocks 2&5 - Campbell River District
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	26	26	26	26	26	32.73	851	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	26	0	26	0	0	1,146.12	29799	1
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	52	26	52	26	26	589.39	30,650	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							30,650	
Backlog Reforestation								
Surveys	200	150	100	100	100	33.00	6600	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	5	5	0	0	0	1,320.00	6600	1
Brushing	0	5	5	0	0	0.00	0	
Totals hectares	205	160	105	100	100	64.39	13,200	
Seed purchase	6000	6000	0	0	0	1.00	6,000	1
Prescriptions and planning dollars							1,500	1
Total backlog reforestation							20,700	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	20	20	20	20	20	1,155.00	23100	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	20	20	20	20	20	1,154.88	23,100	
Prescriptions and planning dollars							2,000	1
Total impeded areas							25,100	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	226	176	126	126	126	32.97	7451	
Site preparation	0	0	0	0	0	0.00	0	
Planting	5	5	0	0	0	1,319.21	6600	
Brushing	46	25	51	20	20	1,149.95	52899	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	277	206	177	146	146	241.69	66950	
Seed purchase	6000	6000	0	0	0	1.00	6000	
Prescriptions and planning							3,500	
Recommended studies							0	
Total backlog program							76,450	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

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TFL39 - Blocks 3&4 - Port McNeill District
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	13	0	0	0	0	96.92	1260	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	13	0	0	0	0	96.89	1,260	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							1,260	
Backlog Reforestation								
Surveys	1500	500	100	100	100	40.00	60000	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	5	5	0	0	0	1,320.00	6600	1
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	1505	505	100	100	100	44.25	66,600	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							3,000	1
Total backlog reforestation							69,600	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	10	10	10	10	10	1,155.00	11550	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	10	10	10	10	10	1,154.77	11,550	
Prescriptions and planning dollars							1,500	1
Total impeded areas							13,050	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	1513	500	100	100	100	40.49	61260	
Site preparation	0	0	0	0	0	0.00	0	
Planting	5	5	0	0	0	1,319.21	6600	
Brushing	10	10	10	10	10	1,154.77	11550	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1528	515	110	110	110	51.97	79410	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							4,500	
Recommended studies							0	
Total backlog program							83,910	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

TFL39 - Block 7 - Mid Coast District
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							0	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

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TFL39 - Block 6 - Queen Charlottes District
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	100	100	50	50	50	33.00	3300	1
Site preparation	5	5	5	5	5	1,650.00	8250	1
Planting	20	20	0	0	0	2,000.00	40000	1
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	125	125	55	55	55	412.39	51,550	
Seed purchase	12000	12000	0	0	0	0.50	6000	1
Total legal obligations							57,550	
Backlog Reforestation								
Surveys	2300	1000	1000	1000	1000	33.00	75900	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	50	50	50	50	50	2,000.00	100000	1
Brushing	500	500	150	150	150	1,200.00	600000	1
Totals hectares	2850	1550	1200	1200	1200	272.25	775,900	
Seed purchase	30000	30000	30000	30000	30000	0.50	15,000	1
Prescriptions and planning dollars							20,000	1
Total backlog reforestation							810,900	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	20	20	20	20	20	1,320.00	26400	2
Totals hectares	20	20	20	20	20	1,319.87	26,400	
Seed purchase	12,000	12,000	12,000	12,000	12,000	0.50	6,000	2
Prescriptions and planning dollars								
Total site restoration							32,400	
Backlog Program Activities - Management Unit Total								
Surveys	2400	1100	1050	1050	1050	33.00	79200	
Site preparation	5	5	5	5	5	1,649.34	8250	
Planting	90	90	70	70	70	1,848.87	166400	
Brushing	500	500	150	150	150	1,200.00	600000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	2995	1695	1275	1275	1275	285.09	853850	
Seed purchase	54000	54000	42000	42000	42000	0.50	27000	
Prescriptions and planning							20,000	
Recommended studies	Retubing Study						20,000	2
Total backlog program							920,850	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

TFL 39 - Weyerhaeuser Company Ltd.
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on Type 1, Type 2 silviculture strategy & Provincial Default Values

The following default provincial factors may be replaced by management unit specific factors.

The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.71	0	0	0	2.9	0.63	0	0	0.42	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	
Provincial factors for estimated value gain at harvest							5-15%	15%	5%	
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	1.5	2	2.43	4.14	5.5	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys

Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	Nursery Seedling Production	Silviculture Surveys
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	113		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	113		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			5,530
Total backlog surveys from the backlog table.			4,639
33% of all silviculture surveys			3,356
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply		(A)	0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			3,747
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			50
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			410

Habitat Supply

Melp staff professional judgement used to estimate this performance measure

Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity.	280

TFL 39 - Weyerhaeuser Company Ltd.
Performance Measures Based on Activities Planned for 2002/2003
Based on Type 1, Type 2 silviculture strategy & Provincial Default Values

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	113	0	3,747	25	113	626	465	110	2,250	8,244	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.42		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	21,597	16,683	7,556	0	61,425		107,261
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			50								50
1.5	Est. area that will be declared as free growing (ha)			410								410
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15%	5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	1.5	2	2.43	4.14	5.5	0.18	0.1	
3.2	Estimated total employment (person days/year)	11	0	375	38	226	1,521	1,925	605	405	824	
3.3	Estimated total full time equivalent positions (FTE)	0	0	2	0	1	8	11	3	2	5	33
4.1	**Forest Health Enhancement (ha)**											600
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											280
5.3	Est. area with secondary value provided to biodiversity (ha)											280

TFL 39 - Weyerhaeuser Company Ltd.
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	9,150	8,355	8,355	8,355	8,355	343	3,142,925
Planning, prescriptions and seedlings							179,500
Backlog Program Field Activities	5,403	2,756	1,612	1,571	1,541	215	1,163,970
Planning, prescriptions and seedlings							102,800
Totals	14,553	11,111	9,967	9,926	9,896		4,589,195

Performance Measures

Potential total merchentable volume increment in 65 years	107,261 m^3
Estimated ha that will be reclassified as stocked	50 ha
Estimated ha that will be declared as free growing	410 ha
Estimated total full time equivalent positions generated	33 FTEs
Forest health enhancement area	600 ha
Planned area for specific wildlife forage or habitat maintenance	280 ha
Estimated area with secondary value provided to biodiversity	280 ha

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at
http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** TFL39 - Port McNeill District Blocks 3&4

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

TFL39 - Port McNeill District Blocks 3&4
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities

Stand Tending

	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1000	1000	1000	1000	1000	33.00	33000	1
Spacing	50	50	50	50	50	1980.00	99000	2
Pruning	10	10	10	10	10	2420.00	24200	3
Fertilizing	350	350	350	350	350	550.00	192500	1
Other	15	15	15	15	15	5333.33	80,000	1
Totals hectares	1425	1425	1425	1425	1425	300.84	428,700	
Planning and prescriptions							20,000	1
Total dollars							448,700	

Forest Health Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Riparian treatments	30	10	0	0	0	3,000.00	90000	1
Non-riparian treatments	0	20	30	30	30	0.00	0	
Totals hectares	30	30	30	30	30	2,999.90	90,000	

Domestic Range

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1000	1000	1000	1000	1000	33.00	33,000	
Spacing	50	50	50	50	50	1,979.96	99,000	
Pruning	10	10	10	10	10	2,419.76	24,200	
Fertilizing	350	350	350	350	350	550.00	192,500	
Other stand tending activities	45	45	45	45	45	3,777.53	170000	
Totals hectares	1455	1410	1410	1410	1410	356.49	518,700	
Planning and prescriptions							20,000	
Studies funding							0	
Total dollars							538,700	

TFL39 - Port McNeill District Blocks 3&4
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	13	0	0	0	0	96.92	1260	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	13	0	0	0	0	96.89	1,260	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							1,260	
Backlog Reforestation								
Surveys	1500	500	100	100	100	40.00	60000	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	5	5	0	0	0	1,320.00	6600	1
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	1505	505	100	100	100	44.25	66,600	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							3,000	1
Total backlog reforestation							69,600	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	10	10	10	10	10	1,155.00	11550	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	10	10	10	10	10	1,154.77	11,550	
Prescriptions and planning dollars							1,500	1
Total impeded areas							13,050	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	1513	500	100	100	100	40.49	61260	
Site preparation	0	0	0	0	0	0.00	0	
Planting	5	5	0	0	0	1,319.21	6600	
Brushing	10	10	10	10	10	1,154.77	11550	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1528	515	110	110	110	51.97	79410	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							4,500	
Recommended studies							0	
Total backlog program							83,910	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

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TFL39 - Port McNeill District Blocks 3&4
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on Type 1, Type 2 silviculture strategy & Provincial Default Values

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3) Estimates of annual growth rate increase from each type of treatment over no treatment. **Potential volume/ha gain (m3/ha/yr) provincial factors:**	0.71	0	0	0	2.9	0.63	0	0	0.42	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	
2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%. **Provincial factors for estimated value gain at harvest**							5-15%	15%	5%	
3) Corporate commitment to employment Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare. **Est. short term employment rate (person days/ha) provincial factors:**	0.1	0.34	0.1	1.5	2	2.43	4.14	5.5	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	Nursery Seedling Production	Silviculture Surveys
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	5		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	5		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity. These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			1,000
Total backlog surveys from the backlog table.			1,513
33% of all silviculture surveys			829
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply (A)			0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			829
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity. 30

TFL39 - Port McNeill District Blocks 3&4
Performance Measures Based on Activities Planned for 2002/2003
Based on Type 1, Type 2 silviculture strategy & Provincial Default Values

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	5	0	829	0	5	10	50	10	350	1,304	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.42		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	956	267	813	0	9,555		11,590
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	0.15	0.05		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	1.5	2	2.43	4.14	5.5	0.18	0.1	
3.2	Estimated total employment (person days/year)	1	0	83	0	10	24	207	55	63	130	
3.3	Estimated total full time equivalent positions (FTE)	0	0	0	0	0	0	1	0	0	1	3
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											30
5.3	Est. area with secondary value provided to biodiversity (ha)											30

TFL39 - Port McNeill District Blocks 3&4
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	1,455	1,410	1,410	1,410	1,410	356	518,700
Planning, prescriptions and seedlings							20,000
Backlog Program Field Activities	1,528	515	110	110	110	52	79,410
Planning, prescriptions and seedlings							4,500
Totals	2,983	1,925	1,520	1,520	1,520		622,610

Performance Measures

Potential total merchentable volume increment in 65 years	11,590 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	3 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	30 ha
Estimated area with secondary value provided to biodiversity	30 ha

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): **TFL 39 Block 3 and 4**

Legal Obligation	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	0	13	#DIV/0!	0	1	33	100	203 0	High cost due to Professional biologist/forester monitoring and small treatment units.
Site preparation	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
B/L Reforestation									
Surveys	0	1500	#DIV/0!	1	0	33	40	21 2	Backlog Free growing surveys will mostly be completed in 2001/02 Costs based on local costs and access issues
Site Prep	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	5	5	0	2	0	1320	1320	0 0	
Brushing	50	0	-100	1	0	1155	n/a	#VALUE!	Error last year This year reported as impeded areas.
Impeded	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's n/a $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)**
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
brushing	0	10	#DIV/0!	0	0	1155	1155	0 0	Error last year These goals were reported under B/L Reforestation Goals reduced based on field survey findings
Site Resoration									
Fill planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Rehab	0	0	#DIV/0!	1	0	2200	n/a	#VALUE!	Reported under enhanced as wildlife habitast creation Goals reduced to 30 ha based on field confirmation
Reforestation	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): TFL 39 blocks 3 and 4 within Port McNeill Forest District

Stand Tending	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	1000	1000	0.0	1	1	33	33	0.0	
Spacing	80	50	-37.5	2	2	1980	n/a n/a	#VALUE!	More realistic goals based on WeyCo staff input and transition from backlog to appraisal blocks
Pruning	20	10	-50.0	2	3	2420	n/a 2420	0.0	Pruning was ranked as a low priority by the Type 2 Analysis
Fertilizing	600	350	-41.7	1	1	330	550 n/a	66.7	Goals set to match sustainable levels and to meet recommended Silv program in Type 2 Analysis. High cost is SCHRP mix.
Other	10	15							Training (ComFor)
Forest Health	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	n/a **2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)**
Spacing	0	0	#DIV/0!	0	0	1980	n/a	#VALUE!	
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Habitat Supply/ Biodiversity							n/a		
Riparian	40	30	-25.0	0	1	3000	n/a n/a	#VALUE!	Habitat creation was ranked as a very high priority by the Type 2 Analysis
Non-Riparian	0	0	#DIV/0!	0	0	3000		-100.0	

Evaluation Rating of TFL 39 Sustainable Harvest RMP

Category	yes	partly	no	Rating (H, M, L)
Submitted by June 27 (TFL) or July 16 (TSA).	✓			H
Basic data for TFL provided, area, current AAC, current harvest forecast, site/age class species profile. Long Run Sustainable Yield stated.			✓	L
History of past treatments provided.			✓	L
Text submitted identifying backlog and enhanced forestry program issues.	✓			H
Opportunities to increase timber supply addressed in text, e.g. short/mid/long-term, timber flow benefits. Consistent with Type 1 or 2 Analysis.			✓	L
Opportunities to increase timber value addressed in text, if none so stated. Consistent with Type 1 or 2 Analysis.		✓		M
Opportunities to increase habitat supply/biodiversity addressed in text, if none so stated. Consistent with Type 1 or 2 Analysis.	✓			H
Working targets proposed for volume/value/habitat.	✓			H
Satisfactory treatment regime table provided.			✓	L
Satisfactory rationale provided for the priority ranking of activities i.e. link to MP ,TSR, other . Consistent with Type 1 or 2 Analysis.		✓		M
Where habitat supply/biodiversity activity indicated, rationale on why the silviculture treatment specifically maintains the non-timber values.	✓			M
All summary tables submitted satisfactorily.	✓			H
Projected job outcome of proposed program stated.	✓			H (# jobs in Perf. Measures/text)
Opportunities to achieve FRBC performance goals	✓			M
Is program within reasonable range of last year's SH RMP projections for year 2002/03.			✓	M +SU, -JS, -PR, -FE, - habitat
Plan Comparison Table submitted with explanation for variations.	✓			H
Performance measures,…where TFL used local factors supporting rationale provided.	N/A			N/A
SH study form completed satisfactorily	✓			H (not in PMFD)
Communication log documents partnership group and stakeholder discussions and issues.			✓	L
Other (describe) Text on submitted disc			✓	L
Overall rating	n/a	n/a	n/a	M

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at
http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** Queen Charlotte Islands District Sum TSA & TFLs

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table
are summarized on the spreadsheet "Management Unit Summary."

Queen Charlotte Islands District Sum TSA & TFLs
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1610	1137	1051	1028	1020	48.04	77350	
Spacing	650	752	766	725	700	1988.46	1292500	
Pruning	110	210	110	128	120	2727.22	300000	
Fertilizing	850	400	400	400	400	542.94	461500	
Other	0	0	0	0	0	0.00	0	
Totals hectares	3220	2499	2327	2281	2240	661.91	2,131,350	
Planning and prescriptions							58,400	
Total dollars							2,189,750	
Forest Health Enhancement								
Spacing	50	50	50	50	50	1,799.89	90000	
Pruning	50	50	50	50	50	2,419.85	121000	
Other treatments	750	500	500	500	500	66.67	50000	
Totals hectares	850	600	600	600	600	307.06	261,000	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	105	105	65	65	65	2,999.94	315000	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	105	105	65	65	65	2,999.83	315,000	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	1610	1137	1051	1028	1020	48.04	77,350	
Spacing	700	802	816	775	750	1,974.99	1,382,500	
Pruning	160	260	160	178	170	2,631.17	421,000	
Fertilizing	850	400	400	400	400	542.94	461,500	
Other stand tending activities	855	605	565	565	565	426.89	365000	
Totals hectares	4175	2599	2427	2381	2340	648.46	2,707,350	
Planning and prescriptions							58,400	
Studies funding							60000	
Total dollars							2,825,750	

Queen Charlotte Timber Supply Area (TSA 25)
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	560	587	601	578	570	35.00	19600	1
Spacing	500	527	541	500	500	2000.00	1000000	1
Pruning	60	60	60	78	70	2500.00	150000	3
Fertilizing	200	200	200	200	200	330.00	66000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	1320	1374	1402	1356	1340	936.06	1,235,600	
Planning and prescriptions							0	
Total dollars							1,235,600	
Forest Health Enhancement								
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	560	587	601	578	570	35.00	19,600	
Spacing	500	527	541	500	500	2,000.00	1,000,000	
Pruning	60	60	60	78	70	2,499.96	150,000	
Fertilizing	200	200	200	200	200	330.00	66,000	
Other stand tending activities	0	0	0	0	0	0.00	0	
Totals hectares	1320	1374	1402	1356	1340	936.06	1,235,600	
Planning and prescripiions							0	
Studies funding							0	
Total dollars							1,235,600	

Naka Tree Farm Licence 25 Block 6
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	550	100	100	100	100	75.00	41250	1
Spacing	50	50	50	50	50	2250.00	112500	1
Pruning	50	150	50	50	50	3000.00	150000	3
Fertilizing	450	0	0	0	0	650.00	292500	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	1100	300	200	200	200	542.04	596,250	
Planning and prescriptions							58,400	1
Total dollars							654,650	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	550	100	100	100	100	75.00	41,250	
Spacing	50	50	50	50	50	2,249.96	112,500	
Pruning	50	150	50	50	50	2,999.94	150,000	
Fertilizing	450	0	0	0	0	650.00	292,500	
Other stand tending activities	0	0	0	0	0	0.00	0	
Totals hectares	1100	300	200	200	200	542.04	596,250	
Planning and prescriptions							58,400	
Studies funding							0	
Total dollars							654,650	

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TFL 39 - Block 6 - Queen Charlottes District
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Stand Tending								
Surveys	300	250	250	250	250	33.00	9900	1
Spacing	100	150	150	150	150	1800.00	180000	2
Pruning	0	0	0	0	0	0.00	0	
Fertilizing	100	100	100	100	100	700.00	70000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	500	500	500	500	500	519.80	259,900	
Planning and prescriptions							0	
Total dollars							259,900	
Forest Health Enhancement								
Spacing	50	50	50	50	50	1,800.00	90000	2
Pruning	50	50	50	50	50	2,420.00	121000	2
Other treatments	500	500	500	500	500	50.00	25000	2
Totals hectares	600	600	600	600	600	393.33	236,000	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	80	80	40	40	40	3,000.00	240000	1
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	80	80	40	40	40	2,999.96	240,000	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	300	250	250	250	250	33.00	9,900	
Spacing	150	200	200	200	200	1,800.00	270,000	
Pruning	50	50	50	50	50	2,419.95	121,000	
Fertilizing	100	100	100	100	100	700.00	70,000	
Other stand tending activities	580	580	540	540	540	456.89	265000	
Totals hectares	1180	600	600	600	600	623.64	735,900	
Planning and prescriptions							0	
Studies funding	(Blackheaded Budworm $50K, Deer Browse $10K)						60000	2
Total dollars							795,900	

TFL 47, Block 18, Teal Cedar Products Ltd.
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities

Stand Tending	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	200	200	100	100	100	33.00	6,600	1
Spacing	0	25	25	25	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Fertilizing	100	100	100	100	100	330.00	33,000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	300	325	225	225	200	132.00	39,600	
Planning and prescriptions							0	
Total dollars							39,600	

Forest Health Enhancement

Forest Health Enhancement	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	250	0	0	0	0	100.00	25000	2
Totals hectares	250	0	0	0	0	100.00	25,000	

Habitat Supply and Biodiversity Enhancement

Habitat Supply and Biodiversity Enhancement	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Riparian treatments	25	25	25	25	25	3,000.00	75,000	1
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	25	25	25	25	25	2,999.88	75,000	

Domestic Range

Domestic Range	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Enhanced Forestry Activities - Management Unit Total	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	200	200	100	100	100	33.00	6,600	
Spacing	0	25	25	25	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Fertilizing	100	100	100	100	100	330.00	33,000	
Other stand tending activities	275	25	25	25	25	363.63	100000	
Totals hectares	575	325	225	225	200	242.78	139,600	
Planning and prescriptions							0	
Studies funding							0	
Total dollars							139,600	

Queen Charlotte Islands District Sum TSA & TFLs
Backlog Program Table
For the 2002/03 Fiscal Year

Activities

Legal Obligations

Activities	Treatment Area Goals (ha) 2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	Plan 2002/03 Unit Cost ($/ha)	Funding ($)	Priority
Surveys	573	545	250	50	50	34.65	19855	
Site preparation	5	5	5	5	5	1,649.01	8250	
Planting	90	65	0	0	0	1,999.96	180000	
Brushing	213	200	100	0	0	1,499.98	319500	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	881	815	355	55	55	598.86	527,605	
Seed purchase	12000	12000	0	0	0	0.50	6000	
Total legal obligations							533,605	

Backlog Reforestation

Activities	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	2600	1900	1300	1100	1000	34.31	89200	
Site preparation	0	0	0	0	0	0.00	0	
Planting	50	50	50	50	50	1,999.92	100000	
Brushing	550	550	200	200	200	1,200.00	660000	
Totals hectares	3200	2500	1550	1350	1250	265.37	849,200	
Seed purchase	30000	30000	30000	30000	30000	0.50	15,000	
Prescriptions and planning dollars							20,900	
Total backlog reforestation							885,100	

Impeded areas

Activities	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	100	50	50	50	50	75.00	7500	
Brushing	50	20	20	20	20	1,799.93	90000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	150	70	70	70	70	649.97	97,500	
Prescriptions and planning dollars							10,200	
Total impeded areas							107,700	

Site Restoration

Activities	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	Unit Cost ($/ha)	Funding ($)	Priority
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	20	20	20	20	20	1,319.80	26400	
Totals hectares	20	20	20	20	20	1,319.27	26,400	
Seed purchase	13,000	13,030	12,000	12,000	12,000	0.54	7,000	
Prescriptions and planning dollars							0	
Total site restoration							33,400	

Backlog Program Activities - Management Unit Total

Activities	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	3273	2495	1600	1200	1100	35.61	116555	
Site preparation	5	5	5	5	5	1,646.38	8250	
Planting	160	135	70	70	70	1,914.87	306400	
Brushing	813	770	320	220	220	1,315.49	1069500	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	4251	3405	1995	1495	1395	353.02	1500705	
Seed purchase	55000	55030	42000	42000	42000	0.51	28000	
Prescriptions and planning							31,100	
Recommended studies							20,000	
Total backlog program							1,579,805	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Queen Charlotte Timber Supply Area (TSA 25)
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	473	445	200	0	0	35.00	16555	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	70	45	0	0	0	2,000.00	140000	1
Brushing	213	200	100	0	0	1,500.00	319500	1
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	756	690	300	0	0	629.70	476,055	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							476,055	
Backlog Reforestation								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	473	445	200	0	0	35.00	16555	
Site preparation	0	0	0	0	0	0.00	0	
Planting	70	45	0	0	0	1,999.91	140000	
Brushing	213	200	100	0	0	1,499.99	319500	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	756	690	300	0	0	629.69	476055	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							476,055	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

1/4/2006

Naka Tree Farm Licence 25 Block 6
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	200	800	200	0	0	50.00	10000	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	200	800	200	0	0	50.00	10,000	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							900	1
Total backlog reforestation							10,900	
Impeded areas								
Surveys	100	50	50	50	50	75.00	7500	1
Brushing	50	20	20	20	20	1,800.00	90000	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	150	70	70	70	70	650.00	97,500	
Prescriptions and planning dollars							10,200	1
Total impeded areas							107,700	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	300	850	250	50	50	58.33	17500	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	50	20	20	20	20	1,799.93	90000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	350	870	270	70	70	307.13	107500	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							11,100	
Recommended studies							0	
Total backlog program							118,600	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

TFL 39 - Block 6 - Queen Charlottes District
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	100	100	50	50	50	33.00	3300	1
Site preparation	5	5	5	5	5	1,650.00	8250	1
Planting	20	20	0	0	0	2,000.00	40000	1
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	125	125	55	55	55	412.39	51,550	
Seed purchase	12000	12000	0	0	0	0.50	6000	1
Total legal obligations							57,550	
Backlog Reforestation								
Surveys	2300	1000	1000	1000	1000	33.00	75900	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	50	50	50	50	50	2,000.00	100000	1
Brushing	500	500	150	150	150	1,200.00	600000	1
Totals hectares	2850	1550	1200	1200	1200	272.25	775,900	
Seed purchase	30000	30000	30000	30000	30000	0.50	15,000	1
Prescriptions and planning dollars							20,000	1
Total backlog reforestation							810,900	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	20	20	20	20	20	1,320.00	26400	2
Totals hectares	20	20	20	20	20	1,319.87	26,400	
Seed purchase	12,000	12,000	12,000	12,000	12,000	0.50	6,000	2
Prescriptions and planning dollars								
Total site restoration							32,400	
Backlog Program Activities - Management Unit Total								
Surveys	2400	1100	1050	1050	1050	33.00	79200	
Site preparation	5	5	5	5	5	1,649.34	8250	
Planting	90	90	70	70	70	1,848.87	166400	
Brushing	500	500	150	150	150	1,200.00	600000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	2995	1695	1275	1275	1275	285.09	853850	
Seed purchase	54000	54000	42000	42000	42000	0.50	27000	
Prescriptions and planning							20,000	
Recommended studies	(Retro-tubing/Fertilization Screening Trials)						20,000	2
Total backlog program							920,850	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

TFL 47, Block 18, Teal Cedar Products Ltd.
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	100	100	100	100	0	33.00	3,300	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	#DIV/0!	0	
Brushing	50	50	50	50	50	1,200.00	60,000	1
Totals hectares	150	150	150	150	50	422.00	63,300	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							63,300	
Impeded areas								
Surveys	0	0	0	0	0	#DIV/0!	0	
Brushing	0	0	0	0	0	#DIV/0!	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	1,000	1030	0	0	0	1.00	1,000	1
Prescriptions and planning dollars							0	
Total site restoration							1,000	
Backlog Program Activities - Management Unit Total								
Surveys	100	100	100	100	0	33.00	3300	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	50	50	50	50	50	1,199.98	60000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	150	150	150	150	50	421.97	63300	
Seed purchase	1000	1030	0	0	0	1.00	1000	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							64,300	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

1/4/2006

Queen Charlotte Islands District Sum TSA & TFLs
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

Potential volume/ha gain (m3/ha/yr) provincial factors:

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
0.77	0	0	0	2.9	0.41	0.25	0	0.46	

Years the factor will affect:

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
0	65	65	65	65	65	65	65	65	

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

Provincial factors for estimated value gain at harvest

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
						5-15%	15-30%	1-5%	

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

Est. short term employment rate (person days/ha) provincial factors:

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	**Nursery Seedling Production**	**Silviculture Surveys**
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	160		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	160		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			1,610
Total backlog surveys from the backlog table.			3,273
33% of all silviculture surveys			1,611
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply		(A)	0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			1,611
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity.

Queen Charlotte Islands District Sum TSA & TFLs
Performance Measures Based on Activities Planned for 2002/2003
Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	160	0	1,611	5	160	813	700	160	850	5,314	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	30,578	21,667	11,375	0	25,500		89,120
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	16	0	161	5	320	2,122	2,772	726	153	531	
3.3	Estimated total full time equivalent positions (FTE)	0	0	1	0	2	12	15	4	1	3	38
4.1	**Forest Health Enhancement (ha)**											850
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											105
5.3	Est. area with secondary value provided to biodiversity (ha)											0

Queen Charlotte Islands District Sum TSA & TFLs
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	4,175	2,599	2,427	2,381	2,340	648	2,707,350
Planning, prescriptions and seedlings							118,400
Backlog Program Field Activities	4,251	3,405	1,995	1,495	1,395	353	1,500,705
Planning, prescriptions and seedlings							79,100
Totals	8,426	6,004	4,422	3,876	3,735		4,405,555

Performance Measures

Potential total merchentable volume increment in 65 years	89,120 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	38 FTEs
Forest health enhancement area	850 ha
Planned area for specific wildlife forage or habitat maintenance	105 ha
Estimated area with secondary value provided to biodiversity	0 ha

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** Queen Charlotte Timber Supply Area (TSA 25)

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

Queen Charlotte Timber Supply Area (TSA 25)
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	560	587	601	578	570	35.00	19600	1
Spacing	500	527	541	500	500	2000.00	1000000	1
Pruning	60	60	60	78	70	2500.00	150000	3
Fertilizing	200	200	200	200	200	330.00	66000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	1320	1374	1402	1356	1340	936.06	1,235,600	
Planning and prescriptions							0	
Total dollars							1,235,600	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	560	587	601	578	570	35.00	19,600	
Spacing	500	527	541	500	500	2,000.00	1,000,000	
Pruning	60	60	60	78	70	2,499.96	150,000	
Fertilizing	200	200	200	200	200	330.00	66,000	
Other stand tending activities	0	0	0	0	0	0.00	0	
Totals hectares	1320	1374	1402	1356	1340	936.06	1,235,600	
Planning and prescriptions							0	
Studies funding							0	
Total dollars							1,235,600	

Queen Charlotte Timber Supply Area (TSA 25)
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	473	445	200	0	0	35.00	16555	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	70	45	0	0	0	2,000.00	140000	1
Brushing	213	200	100	0	0	1,500.00	319500	1
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	756	690	300	0	0	629.70	476,055	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							476,055	
Backlog Reforestation								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	473	445	200	0	0	35.00	16555	
Site preparation	0	0	0	0	0	0.00	0	
Planting	70	45	0	0	0	1,999.91	140000	
Brushing	213	200	100	0	0	1,499.99	319500	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	756	690	300	0	0	629.69	476055	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							476,055	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Queen Charlotte Timber Supply Area (TSA 25)
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

	Tree Improvement	**Nursery Seedling Production**	**Silviculture Surveys**	**Site Preparation**	**Backlog Plant**	**Brush**	**Space**	**Prune**	**Fertilize**	**Support staff and admin**
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.77	0	0	0	2.9	0.41	0.25	0	0.46	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	
Provincial factors for estimated value gain at harvest							5-15%	15-30%	1-5%	
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	**Nursery Seedling Production**	**Silviculture Surveys**
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	70		
Enter area of all other sites planted with improved trees	350		
Total area affected by tree improvement	420		
B Nursery production of seedlings			
Enter sowing requests from SPAR		238,000	
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			560
Total backlog surveys from the backlog table.			473
33% of all silviculture surveys			341
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply			(A) 0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			341
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR)			
Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas)			
Estimate area that will be classified as free growing after a survey in 2002/2003			

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity.

Queen Charlotte Timber Supply Area (TSA 25)
Performance Measures Based on Activities Planned for 2002/2003
Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	420	238,000	341	0	70	213	500	60	200	239,804	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	13,378	5,677	8,125	0	6,000		33,179
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	42	80,920	34	0	140	556	1,980	272	36	23,980	
3.3	Estimated total full time equivalent positions (FTE)	0	450	0	0	1	3	11	2	0	133	600
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											0
5.3	Est. area with secondary value provided to biodiversity (ha)											0

Queen Charlotte Timber Supply Area (TSA 25)
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	1,320	1,374	1,402	1,356	1,340	936	1,235,600
Planning, prescriptions and seedlings							0
Backlog Program Field Activities	756	690	300	0	0	630	476,055
Planning, prescriptions and seedlings							0
Totals	2,076	2,064	1,702	1,356	1,340		1,711,655

Performance Measures	
Potential total merchentable volume increment in 65 years	33,179 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	600 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	0 ha
Estimated area with secondary value provided to biodiversity	0 ha

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): QCI TSA

Stand Tending	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (include separate attachment if more space necessary with reference #)
Surveys	375	560	49.3	1	1	33	35	6.1	Changes in planning/inaccurate planning in 2001/2002
Spacing	336	500	48.8	1	1	1980	2000	1.0	Changes in planning/inaccurate planning in 2001/2002
Pruning	38	60	57.9	3	3	2420	2500	3.3	Main TSA licencee wants to try pruning project (unplanned last year)
Fertilizing	0	200	#DIV/0!	na	1	330	330	0.0	Main TSA licencee wants to try spot fertilization of low Cw types--was not planned last year
Forest Health	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (include separate attachment if more space necessary with reference.#)**
Spacing			#DIV/0!	0	0	1980	1980	0.0	
Pruning			#DIV/0!	0	0	2420	2420	0.0	
Other									
Habitat Supply/ Biodiversity									
Riparian	40	0	-100.0	1	na	3000	na	#VALUE!	Riparian work not planned through SH anymore
Non-Riparian	0	0	#DIV/0!	0	0	3000	0	-100.0	

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): **QCI TSA**

Legal Obligation	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (include separate attachment if more space necessary with reference #)
Surveys	707	473	-33.1	1	1	33	35	6.1	Inaccurate planning
Site preparation			#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	70	#DIV/0!	na	1	1320	2000	51.5	This is for cage removal which was not planned last year
Brushing	94	213	126.6	1	1	1155	1500	29.9	Inaccurate planning/high camp costs
B/L Reforestation									
Surveys			#DIV/0!	0	0	33	n/a	#VALUE!	
Site Prep			#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting			#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing			#VALUE!	0	0	1155	n/a	#VALUE!	

Impeded	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (include separate attachment if more space necessary with reference #)
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
Site Resoration									
Fill planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Rehab	0	0	#DIV/0!	0	0	2200	n/a	#VALUE!	
Reforestation	20	20	0	0	0	1320	1320	0.0	

Agency: **DQC**
TFL:
TSA: **Queen Charlotte TSA 25**

Communication Log for the Sustainable Harvest Objective 2002-2003

Date	*Name (person contacted)*	*Representing*	*Communication Method*	*Comments/Issues*
Jun28/01	Brent Cormack	Weyerhaeuser	Email	Information package for TFL 39 sent to DQC
Jul 9/01	Rob Wood	Teal Jones Group	Phone	Set up meeting for TSA and reminded of TFL submissions
Jul 9/01	Diana Gerdenits	Husby Group	Phone	As for Rob Wood
Jul 9/01	Ken Hall	WFP	Email	Enquired about TFL 25 package
Jul 11/01	Rob Wood	Teal Jones Group	Meeting	Re: TSA SH tables
"	Stirling Angus	Teal Jones Group	"	
"	Travis Glasman	Skidegate Forestry	"	Travis is doing Teal Jones Summary
"	Doug Corrin	Husby Group	"	
Jul11/01	Shelby Lefebvre	WFP	Phone	Enquired about TFL 25 package
Jul11/01	Kerry McGourlick	WFP	Email	Sent information package for TFL 25
Jul 16/01	Rob Wood	Teal Jones Group	Phone	Enquired about TFL 47 package

Naka Tree Farm Licence 25
Sustainable Harvest
2002/03 – 2006/07
Resource Management Plan
Overview Document

June 2001

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Introduction

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- 1.1 Administrative Information
- 1.2 Land Area
- 1.3 Annual Allowable Cut (AAC) and Harvest Forecast
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- 1.5 Age Class Profile
- 1.6 Species Profile

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- 2.1 Timber Quantity
- 2.2 Timber Quality
- 2.3 Forest Health
- 2.4 Habitat Supply

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- 3.1 History
- 3.2 Effect on Previous Timber Supply Analyses

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5.0 Proposed Program

6.0 Other Considerations

Attachments

The following tables are provided for the listed Forest Districts and TFL Blocks:

Tables
- Enhanced Forestry
- Backlog Program
- Performance Measure
- Management Unit Summary
- SH Plan Comparison

TFL Blocks and Forest Districts
- TFL 25 Block 1 Jordan River – South Island Forest District
- TFL 25 Block 2 Loughborough Inlet – Campbell River Forest District
- TFL 25 Block 3 Naka Creek – Campbell River Forest District
- TFL 25 Block 5 Swanson Bay – Mid Coast Forest District
- TFL 25 Block 5 Swanson Bay – North Coast Forest District
- TFL 25 Block 6 Moresby – Queen Charlotte Forest District

Introduction

This document is submitted in response to the Ministry of Forests request for a Resource Management Plan. The background information is drawn from Management Plan 9 for Tree Farm License (TFL) 25 and Management Plan 7 for the former TFL 24. Draft Management Plan 10 for TFL 25 has been submitted to government and distributed for public review but has not been used in the preparation of this package. The Timber Supply Analysis which will support MP 10 as well as an FRBC funded Type I/II analysis is in progress. Target completion dates are Fall 2001 and Spring 2002 respectively.

The RMP covers two forest Regions (Vancouver and Prince Rupert) as well as two FRBC Regions (Pacific and Skeena/Bulkley). Block 5 of the TFL is split into North Coast Forest District and Mid Coast Forest District. The Block 1, 2, 5 and 6 portions of the RMP are administered from WFP's Mainland Islands Region office in Campbell River. Block 3 is administered from WFP's North Vancouver Island Region office in Port McNeill. The following table shows the Tenure/Forest District/WFP Region/FRBC Region splits.

Table 1 – TFL Regions and Districts

TFL Block	WFP Region	MoF Region	MoF District	FRBC Region
Block 1	Mainland/Islands	Vancouver	South Island	Pacific
Block 2	Mainland/Islands	Vancouver	Campbell River	Pacific
Block 3	North Vancouver Island	Vancouver	Campbell River	Pacific
Block 5	Mainland/Islands	Vancouver	Mid Coast	Pacific
Block 5	Mainland/Islands	Prince Rupert	North Coast	Skeena Bulkley
Block 6	Mainland/Islands	Vancouver	Queen Charlotte	Pacific

The text references TFL 25 as a whole but separate tables are provided for each combination of Forest District and TFL Block. No modifications were made to the SH spreadsheets provided with the RMP instruction package. Although they do not apply to all areas, no changes were made to the broad Performance Measures provided on these sheets as we did not have TSA or Type I/II data to justify adjustments.

1.0 Basic Data

1.1 Administrative Information

Western Forest Products Naka Tree Farm License 25 is made up of five 5 administrative units. Two are located on Vancouver Island, two on the Mainland coast between Stafford Inlet and Douglas Channel and one on Moresby Island in the Queen Charlottes. Moresby Tree Farm License 24 was consolidated into TFL 25 in 1998 as Block 6. At the same time the Port McNeill unit (Block 4) of TFL 25 was amended into TFL 6. As a result, TFL 25 has Blocks 1, 2, 3, 5 and 6.

Block #1 is a 31,000 ha unit located west of Sooke between the Strait of Juan de Fuca and the San Juan Ridge. This area has been managed as a separate sustained yield unit within the TFL since the TFL was granted in 1958. Block 1 has reasonable silviculture program costs as the area is accessible and close to a competitive "live at home" silviculture workforce.

Block #2 is a 66,645 ha unit located in Loughborough Inlet. There are three sub-units: Heydon Bay, Apple River and Frazer Bay/Stafford Lake. From 1958 to 1988 Blocks 2, 3, and 5 of the TFL were managed together as a sustained yield unit, with harvest concentrated in Blocks 2 and 3 rather than 5. As a result the Heydon Bay and Apple River sub-units are now primarily second growth with most of the conventional mature timber being found in the Frazer Bay/Stafford Lake sub-unit. Block 2 has high silviculture program costs as the area is remote, costly to access and requires either expensive camp accommodations or expensive temporary facilities. WFP also partners with the local First Nation on silviculture projects so costs are also slightly higher.

Block #3 is a 16,305 ha unit located on Vancouver Island about 50 km east of Port McNeill. As noted under Block 2, this unit was managed in conjunction with blocks 2 and 5 from 1958 to 1988. As harvest did not start in this unit until the mid-1970's, there is not as much immature area proportionate to mature timber as in Block 2. Silviculture program costs are moderate. While site access is good, the unit is remote from established communities and requires silviculture contractors to either set up temporary facilities on site or commute from either Sayward or Woss.

Block #5 is located on the mainland coast between Bella Bella and Gardiner Canal. From 1958 until 1988, this unit was managed in conjunction with units 2 and 3. As a result harvest rates were low, so there are limited second growth management opportunities. Silviculture program costs in this block are very high. Sites are remote, access is very expensive and silviculture contractors have to use expensive camp accommodations or set up temporary facilities. WFP also partners with the local First Nation on silviculture projects so costs are also slightly higher.

Block 6 is located on Moresby Island in the Queen Charlottes. This 53,360 ha unit was formerly Tree Farm License 24. The majority of the northernmost subunit (Moresby) of this Block is older second growth. Current harvest is concentrated in the Sewell Inlet subunit. Silviculture program costs in this Block are high due to remote location and expensive camp accomodations.

1.2 Land Area

The following table summarizes the total and operable area in the TFL 25 by Block as found in the approved management plans (TFL 25 and former TFL 24). The operability has been revisited for Management Plan 10 and is currently being compiled. Significant changes are not expected.

Table 2 – Total and Operable Areas

TFL Block	Total Area (ha)	Operable Forest Area (ha)
1	32,250	21,400
2	66,650	12,950
3	16,300	8,650
5	311,950	48,610
6	53,670	23,310
Summary	480,820	114,960

1.3 Annual Allowable Cut (AAC) and Harvest Forecast

The BC Chief Forester has determined that each TFL Block be managed as a sustained yield unit with it's own yield analysis and AAC. The current AAC and a range of long-run sustained yield harvest rates (LRSY) by block are as follows:

Table 3 – MP 9 AAC and LRSY

TFL Block	AAC	Commercial Thinning	LRSY
1	175,000	10,000	157,000-173,000
2	92,000		65,000
3	55,000		37-54,000
5	255,000		215,000
6	115,000		181-200,000

1.4 Site Class Profile

The site class breakdown by TFL Block is dependent on the site index method used in the individual timber supply analysis. TFL Blocks 1, 3, and 6 site classes are based on WFP's ecological mapping and permanent sample plots. Blocks 2 and 5 are based on Ministry of Forest's methodology. The MoF data will be updated once WFP has completed ecological classification of Block 5. The current site index assignments by TFL Block are as follows:

Table 4 – Operable Area

TFL Block	Operable Area by Site Class (ha)		
	Good	Medium	Poor
1	6,924.6	11,433.5	3,313.1
2	1,139.3	10,301.5	1,668.0
3	2,542.4	5,327.7	1,024.6
5	5,511.4	33,059.0	10,038.0
6	7,743.0	14,439.0	2,362.0

1.5 Age Class Profile

The age class profiles from the current management plan forest inventory (current to Jan. 1, 1995) for the operable forest land is as follows:

Table 5 – Age Class Distribution

TFL Block	Immature (1- 140 Years)	Mature (141+ Years)
1	74%	26%
2	50%	50%
3	34%	66%
5	9%	91%
6	71%	28%
Total TFL	40%	60%

Since 1995 approximately 4,350 ha of predominantly mature timber has been harvested which would reduce the mature to 56% and increase the immature to 44% of the operable area.

1.6 Species Profile

The species profile as of January 1, 1995 was as follows:

Table 6 – Species Distribution

Block	Douglas-Fir	Red and Yellow Cedar	Western Hemlock	Balsam	Spruce	Deciduous
1	45%	17%	33%	2%	0%	3%
2	4%	32%	48%	14%	0%	2%
3	2%	36%	56%	6%	0%	0%
5	0%	42%	36%	18%	2%	2%
6	0%	15%	46%	0%	30%	9%
TFL	10%	28%	45%	8%	6%	3%

Checks of harvested volume since January 1, 1995 indicate that the inventory has been harvested according to the profile.

2.0 Timber Supply Issues

2.1 Timber Quantity

The TFL 25 Management Plan 10 Timber Supply Analysis is in process and due for submission in the fall. The TSA will fully incorporate the Forest Practices Code as well as new protected or protection areas, and will use spatial modeling to project sustainable development. The previous Management Plan projected the following:

Block #1

The harvest in this unit is 175,000 m3/year in the first decade. This rate will decline marginally to between 160,000 and 173,000 by decade 19 depending on the management assumptions used. This block is in rapid transition to a second growth based harvest structure so the future flow of timber from the block can be positively affected by enhanced silviculture treatments.

Block #2

The harvest in this unit is 92,000 m^3/year in the first decade declining to 60-65,000 m^3/year in decade 5. Current and future harvest levels incorporate a significant helicopter volume. The high proportion of second growth in this unit means that the future flow of timber from the block can be positively affected by enhanced silviculture treatments.

Block #3

The harvest in decade one is 55,000 m^3/year declining in decade two to 49,000 m^3/year. There is a significant reserve of mature timber in this unit.

Block #5

The harvest is 255,000 m^3/year declining to a LRSY of 212,000 m^3/year in decade two. The sustainable harvest level in this unit has been negatively impacted by the creation of the Spirit Bear Protection Area. A significant proportion of the remaining volume in this unit is helicopter based.

Block #6

The approved harvest is 115,000 m³/year declining to 98,800 m³/year in decade two, remaining at that level until 2059 when second growth areas begin to reach maturity. The projected harvest level then begins to rise towards a LRSY of between 170,000 and 190,000 m3/year depending on management and landbase assumptions. This unit has a significant age class gap resulting from the establishment of the South Moresby National Park reserve. Enhanced silviculture has the potential to bring the current growth increment to merchantable size more quickly.

Forest policy and factors affecting harvest rates have changed since the Timber Supply Analysis supporting the current TFL 25 annual allowable cut was completed. There have been operational constraints as a result of the implementation of the Forest Practices Code, new direction provided by regional planning processes (CCLRMP and VISLUP) and new landscape level policies such as the Identified Wildlife Management Strategy and Landscape Unit Planning. Blocks 1 and 3 are affected by the VISLUP while Blocks 2 and 5 are subject to initial and future CCLRMP recommendations. Block 5 has been impacted by the declaration of the Spirit Bear Protection Area and will be further affected by the final form that Ecosystem Based Forest Management takes within the various Option Areas.

It is anticipated that these new factors will put downward pressure on the AAC options that will be provided as part of the Timber Supply Analysis.

2.2 Timber Quality

The last Timber Supply Analysis projected that the bulk of the harvest volume in the short to mid-term, would continue to come from mature forests. In the mid to long term, harvest volumes will depend on second growth. If projected rotations do not allow time for the development of quality characteristics such as small knots, clear wood and mature fibre, there could be a reduction in stand value not only on a cubic meter basis but also on a per hectare basis.

WFP's growth and yield work indicates that rotations can be extended without a significant impact on LRSY as long as there is a reasonable age class distribution. Longer rotations are proposed in order to produce stands with an average diameter in the 40 to 45 cm dbh range.

A timber quality analysis produced for the current TFL 25 Management Plan compared second growth log grades predicted by the model to produced log grades from second growth logging. The analysis indicated that it was possible to produce a second growth log grade profile similar to our experienced production from second growth stands if an average diameter of between 35 and 45 cm was targeted.

The TFL 25 analysis confirmed that by extending rotations it would be possible to produce these diameters and improve log grades. Overall, the minor loss in quantity from a longer rotation is more than offset by an increase in quality and future value.

The analysis concluded that there was only weak economic justification for silviculture treatments that increased second growth diameters when compared to the benefits of longer rotations, However, it did note that pruning would be necessary if there was a desire to produce the highest value grades.

2.3 Forest Health

There have been minor forest health and protection issues over the history of TFL 25. Block 1 has scattered *Phellinus* and *Armillaria* root rot pockets. The other TFL Blocks have insignificant *Armillaria* and no *Phellinus* issues.

The most visible insect pests have been the Black Headed Budworm on the Queen Charlotte Island and Vancouver Island and the Spruce Shoot Weevil on Vancouver Island and the Mainland. The budworm has appeared on a regular ten to fifteen year cycle and has caused significant defoliation but little mortality. Volume losses have been factored into AAC calculations through the use of growth and yield data which includes depressed growth during insect attacks. The Canadian Forest Service indicated that the current outbreak in Block 6 collapsed in 2000.

The Sitka Spruce Shoot Weevil restricts the area where Sitka Spruce can be regenerated. The Weevil is being addressed through WFP's Saanich Forestry Center Tree Improvement Program which is cooperating with MOF Breeders to produce and evaluate weevil resistant seed sources.

Hemlock Dwarf Mistletoe is common in mature forests but has not been debilitating to regenerating stands as long as the predominant silvicultural system has been clearcut or clearcut with reserves. As management moves to various levels of retention, the impact of mistletoe on developing stands may increase. In clearcut or clearcut with reserve areas, mistletoe is addressed through regular and residual falling.

Deer browse of young trees is a minor concern in Block 1 and a serious problem in Block 6. In Block 6 deer target western red cedar seedlings until they reach breast height. This issue is being addressed through seedling protection at the time of planting. There is also minor second growth damage caused by porcupines in Block 5.

There are no plans for FRBC funded pest control programs. Endemic health issues are monitored through regular silviculture surveys. Atypical pest outbreaks are monitored with special surveys.

2.4 Habitat Supply

Landscape Unit Planning processes are being discussed in most TFL Blocks. These processes have been very slow to get of the ground. Initial Landscape Unit Planning will establish Old Growth Management Areas and target Wildlife Tree retention percentages. Stand level biodiversity initiatives, including Wildlife Tree patches, are currently incorporated in harvest planning. A brief summary of habitat issues by supply block is listed below:

Block 1

Discussions with MoELP are ongoing to address potential needs for Marbled Murrelets and ungulate winter ranges.

Block 2

Ungulate winter range and mountain goat winter range issues have been identified in a number of locations. Grizzly Bear habitat may be an issue on certain sites, but will be addressed in new silviculture prescriptions through grizzly bear stocking standards and riparian reserves. A Total Resource Plan for all species has been prepared for this Block.

Block 3

No significant wildlife issues have been identified.

Blocks 5

A number of wildlife studies have been conducted by WFP in support of management planning. Grizzly Bear habitat may be an issue on certain sites in Block 5, but will be addressed in new silviculture prescriptions through grizzly bear stocking standards and riparian reserves. WFP has been supporting Kermode research in Block 5 to better understand the higher instance of this recessive trait in black bears in the area.

Block 6

A number of biodiversity or wildlife studies have been conducted by WFP on a watershed basis. A number of habitat modification projects have been proposed under the FRBC EEV program but none have been started.

To date the WFP Sustainable Harvest Program has not focussed on habitat supply issues. There are no plans to push the Habitat Supply Program until program direction and overlaps betweem the EEV and SH programs are clearer.

3.0 Enhanced Backlog and Intensive Silviculture

3.1 History

A summary of historical silviculture work on TFL 25 is attached in appendix 1.

3.2 Effect on Previous Timber Supply Analyses

Brushing

Brushing has been conducted as a routine treatment to maintain conifer dominance on sites. As such, the historic brushing program has had no effect on the timber supply.

Pre Commercial Thinning (PCT)

The TFL 25 MP 9 Analysis assumptions incorporated historical levels of PCT into the base case harvest determination. The analysis also conducted sensitivity analyses, thinning up to 50-75% of the available projected growing stock in several supply blocks (1, 2, 3). The general impact on timber supply harvest volume level was slightly negative or positive depending on the specific assumptions for a given TFL Block.

PCT benefits include favourable values and harvest costs associated with the larger piece sizes resulting from PCT. Blocks 2 and 6 have degrees of age class imbalance, which will additionally benefit from PCT. Economic analyses at the stand level in TFL Management Plan 9 indicated positive net present value from PCT on good sites.

Pruning

The TFL 25 Timber Supply Analysis did not model pruning as pruning targets wood quality rather than volume. The only comment was that higher log grades would not be possible without pruning however a cost/benefit analysis for this was not done.

Fertilization

Fertilization of second growth mixed stands of cedar and hemlock that are dominated by salal show significant growth increases. Fertilization will also add volume and value to PCT and CT.

Block 1 contains some cedar–hemlock-salal sites that are nutrient deficient and will benefit from fertilization. MP 9 modeling of fertilization of all projected PCT and CT in Block 1 demonstrated that harvest levels were maintained but not increased. Montane screening trials have been encouraging. It is proposed that further screening trials be established in this Block. There may be opportunities for late rotational fertilization prior to harvest in second growth stands.

Blocks 2 and 3 contain some cedar-hemlock-salal sites that are nutrient deficient and will benefit from fertilization as well as managed second growth stands that have been spaced and pruned.

Block 5 has not traditionally been considered a good area to fertilize due to poor access. WFP established fertilizer screen trials in this area in spring 2001.

Block 6 has been extensively foliar sampled and has demonstrated endemic nutrient deficiencies. PCT and fertilization in this block will contribute to alleviating age class imbalance. Open grown spruce stands in this block have heavy limbs which reduce log value. Small operational trials are proposed to see if wood quality can be improved with pruning.

4.0 Future Timber Supply

4.1 Timber Supply Quantity and Quality Improvement

Conventional backlog treatments or intensive treatments such as precommercial thinning or convention stand fertilization have little impact on LRSY as long as there is a manageable immature age class distribution. If forest management policies create an immature age class imbalance, these treatments can smooth but not increase overall harvest flows.

SCHIRP research indicates that fertilization of young hemlock/cedar stands to attain crown closure can have a positive effect on site productivity and harvest rates, especially if the treatments result in permanent growth effects. Fertilization of PCT or CT areas can capture the increase in growing space and compensate for potential volume impacts from PCT.

However, 'intensive' basic practices which decrease regeneration delay, increase site occupancy, hasten free-growing and green-up or permanently increase site productivity could have the greatest effect on long term yields. The volume forecasts which WFP growth and yield models use are reduced by approximately 20% to recognize operational factors that reduce stocking and final volume on an area basis. It would be possible to reduce this Operational Adjustment Factor (OAF) through genetic improvement and an aggressive stocking and brushing program. The issue of an 'enhanced' basic program has been raised in the past but never approved for implementation by the Ministry of Forests or FRBC. An "enhanced" basic program is not proposed as part of this RMP.

5.0 Proposed Program

The proposed sustainable harvest programs have been attached for each TFL Block and Forest District. These programs cover currently eligible impeded backlog and enhanced silviculture projects. The focus of the program is to first address backlog issues and then focus on enhanced opportunities. The enhanced program has two goals. The first is to provide employment opportunities to First Nations in areas of chronic under-employment. The second, in areas where under employment is not a significant issue, is to focus on treatments which will maximize volume production or address age class imbalances.

Silviculture studies are proposed under the SH envelope to continue work on native grass seed for revegetation purposes in Block 1 (South Island) and to monitor fertilization screening trials in block 5 (North Coast).

6.0 Other Considerations

The provincial enhanced silviculture program has historically had a social component. The employment and social values were given even greater importance under the initial FRBC mandate. To date licensee and government programs have ensured that a proportion of the silviculture program was directed to local communities and First Nations.

Western Forest Products is encouraging the development of local First Nations silviculture contractors through the award of silviculture contracts at market prices. It is our expectation that RMPs will be able to retain sufficient flexibility to incorporate these programs and partnerships into new programs.

Appendix I

TREE FARM LICENCE 25
Historical Summary of Activities

Year	Denuded (ha)	Planted (ha)	No. Trees Planted	Juvenile Spacing (ha)	Brushing (ha)	Prescribed Burning (ha)	Mechanical Site Prep. (ha)	Fertilization (ha)	Pruning (ha)	Commercial Thinning (ha)
Pre 1965	6062.8	2628.2	2531100	0.0	153.1	711.1	36.5	0.0	0.0	0.0
1965	884.4	346.4	298500	0.0	4.1	564.9	0.0	0.0	0.0	0.0
1966	999.9	458.5	432800	40.1	1.2	341.2	0.0	0.0	0.0	0.0
1967	798.3	577.4	547650	0.0	623.0	477.3	0.0	0.0	0.0	0.0
1968	727.4	630.2	645250	0.0	143.2	308.4	0.0	0.0	0.0	0.0
1969	766.3	607.7	446100	15.8	62.8	321.1	0.0	0.0	0.0	0.0
1970	741.6	418.8	341450	0.0	279.5	305.6	0.0	0.0	0.0	0.0
1971	834.7	671.3	586700	0.0	37.0	187.6	0.0	0.0	0.0	0.0
1972	918.5	290.6	295300	0.0	11.3	284.3	0.0	0.0	0.0	0.0
1973	1084.5	942.3	772450	239.8	320.8	199.0	0.0	0.0	0.0	16.2
1974	911.4	444.1	363850	224.6	0.0	761.3	0.0	0.0	0.0	0.0
1975	729.8	214.4	199450	0.0	2.8	32.0	0.0	0.0	0.0	0.0
1976	1143.7	902.5	807250	53.5	4.5	674.5	2.4	0.0	0.0	0.0
1977	824.1	876.8	757550	535.1	15.3	0.0	0.0	0.0	0.0	0.0
1978	978.4	626.0	555600	569.5	8.0	390.0	14.0	522.5	0.0	29.2
1979	838.3	922.6	749000	620.5	35.0	663.0	0.0	40.0	0.0	40.0
1980	829.5	586.7	493650	667.3	79.9	256.0	12.0	737.5	0.0	60.0
1981	650.4	924.1	803900	615.2	31.6	342.5	0.0	0.0	0.0	34.7
1982	787.2	851.8	827700	0.0	0.0	0.0	0.0	223.8	0.0	0.0
1983	1236.1	757.7	669050	161.2	186.7	290.5	0.0	0.0	0.0	0.0
1984	1180.3	846.6	809000	99.0	376.9	118.4	0.0	0.0	0.0	0.0
1985	1010.1	576.0	522050	322.4	716.0	109.0	0.0	0.0	0.0	0.0
1986	985.7	748.5	630950	335.7	614.5	489.9	6.9	0.0	4.5	0.0
1987	1213.6	1605.4	1297750	485.5	712.8	100.7	0.0	0.0	17.2	0.0
1988	1239.6	1249.5	982850	57.4	928.7	70.0	26.3	22.6	11.6	0.0
1989	773.0	1026.1	735600	325.7	1314.5	165.8	31.2	0.0	6.6	0.0
1990	1078.5	847.0	712350	433.4	974.1	107.4	0.0	0.0	38.9	0.0
1991	796.2	1157.8	842850	705.6	33.1	38.4	0.0	0.0	3.2	0.0
1992	834.8	820.2	673900	869.0	2.1	19.0	0.0	1304.0	38.0	0.0
1993	907.6	733.1	639750	231.5	111.5	16.4	0.0	0.0	47.3	0.0
1994	1020.0	652.0	546000	511.5	338.7	9.5	38.1	0.0	157.8	0.0
1995	776.5	897.2	853050	721.4	515.1	48.5	0.0	581.4	308.6	0.0
1996	924.2	1103.8	1089750	319.8	168.9	0.0	8.5	1947.2	165.0	16.2
1997	850.5	904.9	951900	483.2	269.0	21.5	3.6	1061.9	313.9	25.0
1998	448.4	635.2	652250	404.5	440.7	0.0	10.0	0.0	236.1	26.4
1999	619.4	358.1	413000	234.3	143.7	0.0	14.8	2641.3	136.0	0.0
2000	734.6	744.2	752500	211.9	52.9	11.6	7.1	0.0	144.1	0.0
TOTAL	38140.3	29583.7	26229800	10494.4	9713	8436.4	211.4	9082.2	1628.8	247.7

- Historical Summary amended to remove the former TFL 25 Block 4 and include the former TFL 24.

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Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** Naka Tree Farm Licence 25 Block 6

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

Naka Tree Farm Licence 25 Block 6
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	550	100	100	100	100	75.00	41250	1
Spacing	50	50	50	50	50	2250.00	112500	1
Pruning	50	150	50	50	50	3000.00	150000	3
Fertilizing	450	0	0	0	0	650.00	292500	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	1100	300	200	200	200	542.04	596,250	
Planning and prescriptions							58,400	1
Total dollars							654,650	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	550	100	100	100	100	75.00	41,250	
Spacing	50	50	50	50	50	2,249.96	112,500	
Pruning	50	150	50	50	50	2,999.94	150,000	
Fertilizing	450	0	0	0	0	650.00	292,500	
Other stand tending activities	0	0	0	0	0	0.00	0	
Totals hectares	1100	300	200	200	200	542.04	596,250	
Planning and prescriptions							58,400	
Studies funding							0	
Total dollars							654,650	

1/4/2006

Naka Tree Farm Licence 25 Block 6
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	200	800	200	0	0	50.00	10000	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	200	800	200	0	0	50.00	10,000	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							900	1
Total backlog reforestation							10,900	
Impeded areas								
Surveys	100	50	50	50	50	75.00	7500	1
Brushing	50	20	20	20	20	1,800.00	90000	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	150	70	70	70	70	650.00	97,500	
Prescriptions and planning dollars							10,200	1
Total impeded areas							107,700	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	300	850	250	50	50	58.33	17500	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	50	20	20	20	20	1,799.93	90000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	350	870	270	70	70	307.13	107500	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							11,100	
Recommended studies							0	
Total backlog program							118,600	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

1/4/2006

Naka Tree Farm Licence 25 Block 6
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.77	0	0	0	2.9	0.41	0.25	0	0.46	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	
Provincial factors for estimated value gain at harvest							5-15%	15-30%	1-5%	
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area: Tree Improvement	Area: Nursery Seedling Production	Area: Silviculture Surveys
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	0		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	0		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			550
Total backlog surveys from the backlog table.			300
33% of all silviculture surveys			281
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply		(A)	0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			281
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity.

Naka Tree Farm Licence 25 Block 6
Performance Measures Based on Activities Planned for 2002/2003
Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	0	0	281	0	0	50	50	50	450	881	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	1	1,333	813	0	13,500		15,646
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	0	0	28	0	0	131	198	227	81	88	
3.3	Estimated total full time equivalent positions (FTE)	0	0	0	0	0	1	1	1	0	0	4
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											0
5.3	Est. area with secondary value provided to biodiversity (ha)											0

Naka Tree Farm Licence 25 Block 6
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	1,100	300	200	200	200	542	596,250
Planning, prescriptions and seedlings							58,400
Backlog Program Field Activities	350	870	270	70	70	307	107,500
Planning, prescriptions and seedlings							11,100
Totals	1,450	1,170	470	270	270		773,250

Performance Measures	
Potential total merchentable volume increment in 65 years	15,646 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	4 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	0 ha
Estimated area with secondary value provided to biodiversity	0 ha

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): TFL 25 Block 6

Stand Tending	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	100	550	450.0	0	0	33	75	127.3	High camp and travel costs.
Spacing	50	50	0.0	0	0	1980	2250	13.6	Remote, high camp and access costs. Good ground conditions.
Pruning	50	50	0.0	0	0	2420	3000	24.0	Remote, high camp and access costs.
Fertilizing	0	450	#DIV/0!	0	0	330	650	97.0	Program moved from 2001/02. SCHIRP mix and access results in higher costs.

Forest Health	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)
Spacing	0	0	#DIV/0!	0	0	1980	n/a	#VALUE!	
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Habitat Supply/ Biodiversity									
Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	
Non-Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): TFL 25 Block 6

Legal Obligation	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site preparation	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
B/L Reforestation									
Surveys	0	200	#DIV/0!	0	1	33	50	51.5	Remote, high camp and access costs.
Site Prep	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	

Impeded	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	50	100	100	1	1	33	75	127.3	Remote, high camp and access costs.
brushing	20	50	150	1	1	1155	1800	55.8	Remote, high camp and access costs.
Site Resoration									
Fill planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Rehab	0	0	#DIV/0!	0	0	2200	n/a	#VALUE!	
Reforestation	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	

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June 19, 2001

RMP Supporting Documentation: Weyerhaeuser Operations (TFL39 Block6)

The Type 2 timber supply analysis of incremental silviculture opportunities in TFL 39, prepared March 2001 and the draft Management Plan # 8 provided the guidance in preparing this RMP.

The following provides a summary of how the recommended silviculture program from the Type 2 analysis will be implemented:

WRP –MOELP Program

Riparian Treatment

To-date riparian restoration has included alder overstory removal on Mathers Creek (1999/2000). There is still legal obligation to complete the prescribed treatments in the Upper Mathers watershed on approximately 12.4 ha.

Backlog Program

Surveys

The anticipated area requiring free growing surveys and brushing assessments is 2300 ha for 2002/03. The free growing surveys are targeted for completion in 2003/04, however the amount of remnant brushing success surveys is uncertain as the forecasted brushing area remains high. Other miscellaneous assessments of ongoing projects (i.e. backlog SPs obligations) will be required to ensure all backlog obligations are addressed. Brushing was given the highest ranking with the Type 2 analysis.

Planting

Backlog planting is slowly being eliminated. NSR areas are being duly treated as they are discovered during other activities. Some additional areas may be discovered through the 2001/02 free growing surveys. 70 ha per year will be scheduled for 2002/03 and 2003/2004, with 50 ha scheduling in the last 3 years.

Brushing

We are still anticipating a large brushing program (500 ha) mainly due to recurrence of alder competition on portions of previously treated blocks. Some further areas might be discovered through the 2001/02 free growing surveys.

Due to the importance placed on brushing in the Type 2 analysis, a significant level of brushing (150 ha) will continue to the scheduled. The purpose here is to account for the apparent need to retreat some blocks to maintain a free growing stand. This will continue to be a requirement unless the QCI district will allow more areas to contain a significant alder component after free growing.

Enhanced Program

Rehabilitation

There will be approximately 34 ha of variable density spacing completed on the Mamin River and Ghost Creek in 2001/02. Further field reconnaissance in the next two years should also identify a significant amount of additional area for this treatment on the Mamin, Yakoun, Mathers Rivers and various other areas. Riparian enhancement spacing was given a high ranking with the Type 2 analysis with the anticipation that landscape unit planning process will display this activity has a positive effect on timber supply. A 100% growth in the scheduled area to be treated was made to the plan this year due to the high ranking. There will be 80 ha scheduled for treatment in 2002/2003.

Surveys

Enhanced surveys of 300 hectares per year will be needed to locate the annual treatment area (200 ha) for other enhanced activities of activities of spacing, pruning, and riparian enhancement activities. This estimate is based on historic survey levels.

Spacing

Approximately 150 ha of spacing is anticipated, as per the Type 2 analysis: Space hemlock stands >8,000 sph with SI > 27m to densities of 1200-1500 sph. With this regime also favour alternative species such as Cw.

Pruning

Pruning goals are 50 hectares per year with a target pruning density of 800 sph and are aimed at forest health enhancement. Pruning is considered a low priority in the Type 2 analysis.

Fertilization

The focus of the 100 ha program will be to help low productivity stands meet free growing obligations and initiate some SCHIRP fertilization areas.

Forest Health Enhancement

The other treatments scheduled for under Forest Health Enhancement have been maintained at 500 ha in anticipation of re-establishing stands that have been severely damaged by the black-headed budworm outbreak.

Studies and Funding

Three studies are scheduled in 2002/03 for a total of $80,000. The budworm study is a continuation of previous years of tracking budworm activity. The deer browse trial is a project with John Henigman. The retro-tubing study is an analysis of treating and maintaining areas previously protected with tubes.

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** TFL 39 - Block 6 - Queen Charlottes District

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

TFL 39 - Block 6 - Queen Charlottes District
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	300	250	250	250	250	33.00	9900	1
Spacing	100	150	150	150	150	1800.00	180000	2
Pruning	0	0	0	0	0	0.00	0	
Fertilizing	100	100	100	100	100	700.00	70000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	500	500	500	500	500	519.80	259,900	
Planning and prescriptions							0	
Total dollars							259,900	

Forest Health Enhancement

Spacing	50	50	50	50	50	1,800.00	90000	2
Pruning	50	50	50	50	50	2,420.00	121000	2
Other treatments	500	500	500	500	500	50.00	25000	2
Totals hectares	600	600	600	600	600	393.33	236,000	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	80	80	40	40	40	3,000.00	240000	1
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	80	80	40	40	40	2,999.96	240,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	300	250	250	250	250	33.00	9,900	
Spacing	150	200	200	200	200	1,800.00	270,000	
Pruning	50	50	50	50	50	2,419.95	121,000	
Fertilizing	100	100	100	100	100	700.00	70,000	
Other stand tending activities	580	580	540	540	540	456.89	265000	
Totals hectares	1180	600	600	600	600	623.64	735,900	
Planning and prescriptions							0	
Studies funding	(Blackheaded Budworm $50K, Deer Browse $10K)						60000	2
Total dollars							795,900	

TFL 39 - Block 6 - Queen Charlottes District
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	100	100	50	50	50	33.00	3300	1
Site preparation	5	5	5	5	5	1,650.00	8250	1
Planting	20	20	0	0	0	2,000.00	40000	1
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	125	125	55	55	55	412.39	51,550	
Seed purchase	12000	12000	0	0	0	0.50	6000	1
Total legal obligations							57,550	
Backlog Reforestation								
Surveys	2300	1000	1000	1000	1000	33.00	75900	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	50	50	50	50	50	2,000.00	100000	1
Brushing	500	500	150	150	150	1,200.00	600000	1
Totals hectares	2850	1550	1200	1200	1200	272.25	775,900	
Seed purchase	30000	30000	30000	30000	30000	0.50	15,000	1
Prescriptions and planning dollars							20,000	1
Total backlog reforestation							810,900	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	20	20	20	20	20	1,320.00	26400	2
Totals hectares	20	20	20	20	20	1,319.87	26,400	
Seed purchase	12,000	12,000	12,000	12,000	12,000	0.50	6,000	2
Prescriptions and planning dollars								
Total site restoration							32,400	
Backlog Program Activities - Management Unit Total								
Surveys	2400	1100	1050	1050	1050	33.00	79200	
Site preparation	5	5	5	5	5	1,649.34	8250	
Planting	90	90	70	70	70	1,848.87	166400	
Brushing	500	500	150	150	150	1,200.00	600000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	2995	1695	1275	1275	1275	285.09	853850	
Seed purchase	54000	54000	42000	42000	42000	0.50	27000	
Prescriptions and planning							20,000	
Recommended studies	(Retro-tubing/Fertilization Screening Trials)						20,000	2
Total backlog program							920,850	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

TFL 39 - Block 6 - Queen Charlottes District
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on Type 1,Type 2 silviculture strategy & Provincial Default Values

The following default provincial factors may be replaced by management unit specific factors.

The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

Tree Improve-ment	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

Potential volume/ha gain (m3/ha/yr) provincial factors:

Tree Improve-ment	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
0.71	0	0	0	2.9	0.63	0	0	0.42	

Years the factor will affect:

Tree Improve-ment	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
0	65	65	65	65	65	65	65	65	

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

Provincial factors for estimated value gain at harvest

Tree Improve-ment	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
						5-15%	15.00%	5.00%	

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

Est. short term employment rate (person days/ha) provincial factors:

Tree Improve-ment	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
0.1	0.34	0.1	1.5	2	2.43	4.14	5.5	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys

Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improve-ment	Nursery Seedling Production	Silviculture Surveys
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	90		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	90		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			300
Total backlog surveys from the backlog table.			2,400
33% of all silviculture surveys			891
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply (A)			0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			891
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			50
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity. 80

TFL 39 - Block 6 - Queen Charlottes District
Performance Measures Based on Activities Planned for 2002/2003
Based on Type 1,Type 2 silviculture strategy & Provincial Default Values

	Performance Measure	Tree Improve-ment	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	90	0	891	5	90	500	150	50	100	2,456	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.42		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	17,199	13,325	2,438	0	2,730		35,692
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			50								50
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	0.15	0.05		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	1.5	2	2.43	4.14	5.5	0.16	0.1	
3.2	Estimated total employment (person days/year)	9	0	89	8	180	1,215	621	275	18	246	
3.3	Estimated total full time equivalent positions (FTE)	0	0	0	0	1	7	3	2	0	1	15
4.1	**Forest Health Enhancement (ha)**											600
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											80
5.3	Est. area with secondary value provided to biodiversity (ha)											80

TFL 39 - Block 6 - Queen Charlottes District
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	1,180	600	600	600	600	624	735,900
Planning, prescriptions and seedlings							60,000
Backlog Program Field Activities	2,995	1,695	1,275	1,275	1,275	285	853,850
Planning, prescriptions and seedlings							67,000
Totals	4,175	2,295	1,875	1,875	1,875		1,716,750

Performance Measures

Potential total merchentable volume increment in 65 years	35,692 m^3
Estimated ha that will be reclassified as stocked	50 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	15 FTEs
Forest health enhancement area	600 ha
Planned area for specific wildlife forage or habitat maintenance	80 ha
Estimated area with secondary value provided to biodiversity	80 ha

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): 39/Block 6

Stand Tending	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)**
Surveys	300	300	0.0	1	0	33	33	0.0	
Spacing	100	100	0.0	2	0	1980	1980	0.0	
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Fertilizing	100	100	0.0	1	0	330	700	112.1	SCHIRP fertilization regime is being used.
Forest Health	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)**
Spacing	50	50	0.0	0	0	1980	1980	0.0	
Pruning	50	50	0.0	0	0	2420	2420	0.0	
Other	500	500							
Habitat Supply/ Biodiversity									
Riparian	0	80	#DIV/0!	0	0	3000	3000	0.0	The Type 2 analysis objectives places priority on this treatment. We have been growing this project over time
Non-Riparian	0	0	#DIV/0!	0	0	3000	0	-100.0	

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL):

Legal Obligation	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	100	100	0	0	0	33	33	0.0	
Site preparation	5	5	0	0	0	1650	1650	0.0	
Planting	20	20	0	0	0	1320	2000	51.5	Isolation and spotty locations
Brushing	0	0	#DIV/0!	0	0	1155	1200	3.9	
B/L Reforestation									
Surveys	2000	2300	15	0	0	33	33	0.0	
Site Prep	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	50	50	0	0	0	1320	2000	51.5	Isolation and spotty loactions
Brushing	150	500	233.3	0	0	1155	1200	3.9	More area identified for treatment than anticipated
Impeded	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)**
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
Site Resoration									
Fill planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Rehab	0	0	#DIV/0!	0	0	2200	n/a	#VALUE!	
Reforestation	20	20	0	0	0	1320	1320	0.0	

Blackheaded Budworm Study Outline

Short Description of Study	Establishment of research plots on TFL39, Block 6 to examine insect defoliation and determine impacts on regenerating western hemlock on the Queen Charlotte Islands.
Background / Justification	The current outbreak was detected first by the CFS in Gwaii Haanas Park on Moresby Island in 1996. In subsequent years, defoliation appeared further north. By 1998 more than 37,000 ha of defoliation were mapped on the eastern coast of the Moresby archipelago. Unlike earlier outbreaks, this outbreak was persisting in mostly regenerating hemlock stands. Virtually all age classes older than 10 years were affected and the intensity of defoliation appeared most severe in spaced stands between 15 and 30 years of age. Egg samples in 1998 predicted continuing infestations on Moresby Island and rising populations of budworms were anticipated in susceptible stands on Graham Island. Throughout this period, annual reports of results and maps of current defoliation were prepared and distributed by the CFS as part of an MOU with the BC Ministry of Forests under the South Moresby Forest Replacement Agreement. As the extent of defoliation persisted in 1999 and 2000 and large areas of western hemlock throughout the Timber Supply Areas on Moresby and Graham Islands were affected, the forest industry began making enquiries into the effect of this disturbance on the managed forest; how rates of regeneration would be affected, what would be the affect on future wood supply, and how silvicultural activities might be integrated with the ecology of this disturbance to mitigate impacts.
Methods & Procedures	See Nealis Report as at April 12'01.
Lead Contact for Study	Vince Nealis, Research Scientist, CFS
Key partners affected by this issue	Forest companies on QCI, Ministry of Forests, Ministry of Environment, Lands and Parks.
Temporal Scale of importance (how urgent is this?)	Long term timber supply on QCI.
Spatial Scale (small vs wide reaching impacts)	Wide reaching impacts (quantity and quality of timber supply).
Link to Resource Management Plans, Timber Supply Review, higher level plans	Timber Supply (QCI), development and silviculture plans.

Strategic Objectives: (tick all that apply)	**SH**[1]	**EEV**	**SSFM**	**C&I**	**VA**[2]	**WF**
	X					

Region: Pacific **Study (Y/N): Y**	**Mgmt. Unit: TFL39, Block 6**
Date: 25 June 2001 **or Research (Y/N): N**	**$ to Complete : 50,000.00**
Proponent: Weyerhaeuser – Queen Charlottes Timberlands	**Work plan #: PAM01807** **Activity Location#: 722127**
Number of years to complete: 1	

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[1] SH = Sustainable Harvest EEV = Enhance Environmental Values SSFM = Strengthen Sustainable Forest Management C&I = Criteria and Indicators of Sustainability VA = Value Added CO = Communities WF = Workforce

[2] We will include needs for these strategic objectives if identified but will not ask specifically for these needs.

	Deer Browse Study Outline
Short Description of Study	Continuation of the deer browse barrier assessment research study in the Queen Charlotte Islands to protect young western redcedar seedlings. This research is providing an understanding of the cost-effective way to protect the young trees from deer browsing using commercial browse barrier products in order to achieve green-up and free growing status.
Background / Justification	This research study has been underway since 1997 and has previously been funded by South Moresby Forest Replacement Account. The study has been initiated to provide forest companies and the BC Ministry of Forests technical and economic information on how best to protect cedar seedlings from deer browse. We have determined to date that alternative commercial barrier products will offer protection for a summed cost in a range between $3.12 and $8.85 per tree. There remain a number of important technical and economic issues to resolve prior to the completion of this study, in particular how best to achieve green-up and free growing.
Methods & Procedures	A comprehensive research design involves the replicated testing of four commercial browse barriers and a control on 3 large clear-cut sites in the Queen Charlotte Islands. A complete description of the research design is available in our year end report (Henigman and Martinz, 2000) attached to this summary.
Lead Contact for Study	John Henigman RPBio, RPF BC Ministry of Forests Forest Practices Branch Victoria, BC 250 356 5886 john.henigman@gems1.gov.bc.ca
Key partners affected by this issue	BC Ministry of Forests, Queen Charlotte Islands Forest District Weyerhaeuser Canada Ltd Husby Forest Products J.S. Jones Timber Ltd. Western Forest Products Ltd. Canadian Forestry Equipment Ltd. Sinclair Silviculture Ltd. Sinocast Imports Inc. Sweetwood Enterprises Ltd.
Temporal Scale of importance (how urgent is this?)	This is an urgent request.

Spatial Scale (small vs wide reaching impacts)	This project is having wide reaching impacts on the regeneration of cedar and on the ability of forest licensees to achieve green-up and meet their free growing obligations.					
Link to Resource Management Plans, Timber Supply Review, higher level plans	This project will affect resource management plans and timber supply review					
Strategic Objectives: (tick all that apply)	**SH**[1] X	**EEV**	**SSFM** X	**C&I**	**VA**[2]	**WF**

Region: Pacific **Study (Y):Y**	**Mgmt. Unit: TFL39, Block 6**
New Project for 2002/03 (Y): __Y__	**$ to Complete $10,000**
Proponent: Weyerhaeuser Company Limited	**Workplan #:PAM01807**
Number of years to complete:__	**Activity Location #:__________**

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[2] We will include needs for these strategic objectives if identified but will not ask specifically for these needs.

Retro-tubing/Fertilization Screening Trials

Short Description of Study	Perform screening trials and maintenance on low site index sites previously (2000/2001) fertilized and tube-protected. This was done in an effort to increase growth of western red cedar over Hw and salal . Cw is the correct species for these sites but cannot flourish due to heavy deer browsing.
Background / Justification	In fiscal 2000/2001, Weyerhaeuser Co. Ltd. undertook (with FRBC funding) a project involving use of differing fertilizer mixes, along with protective tubing, on low site index areas. The purpose of the project was to establish the optimum mix of fertilizer to enhance growth of Cw over Hw and salal. The project was predicated on the fact that, on low site index areas, the Cw is unlikely to reach free-growing height due to deer browsing. Hw and salal, on the other hand, will flourish but produce a crop which is neither ecologically nor economically viable. As well, even though the Hw will usually reach free to grow, it isn't likely to survive over the long term. The only solution appears to be to assist the Cw growth through use of the correct mix of fertilizers and, at the same time, protect the trees with tubing from browsing until they grow beyond the deer's reach. Continuation of this project through screening trials is necessary in order to get value from the plots already established.
Methods & Procedures	Maintenance of the plots, recording of data from each, and analyses of results.
Lead Contact for Study	Jacques Prairie, Forester, Weyerhaeuser Co. Ltd., QCI Timberlands Unit
Key partners affected by this issue	Forest companies, Ministry of Forests
Temporal Scale of importance (how urgent is this?)	Important in the sense that the sites are already established and further work is necessary in order to achieve full value for it.
Spatial Scale (small vs wide reaching impacts)	Impacts will be significant throughout the Queen Charlotte Islands
Link to Resource Management Plans, Timber Supply Review, higher level plans	Timber Supply (QCI), development and Silviculture Plans.

Strategic Objectives: **(tick all that apply)**	**SH**[1] **X**	**EEV**	**SSFM**	**C&I**	**VA**[2]	**WF**

Region: Vancouver Study (Y/N):Y **New Project for 2002/03 (Y/N): Continuation** **Proponent: Weyerhaeuser Co. Ltd., QCTU** **Number of years to complete:____**	**Mgmt. Unit: TFL39, Block 6** **$ to Complete $20,000** **Workplan #: PAM01807** **Activity Location #:__________**

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[1] SH = Sustainable Harvest EEV = Enhance Environmental Values SSFM = Strengthen Sustainable Forest Management C&I = Criteria and Indicators of Sustainability VA = Value Added CO = Communities WF = Workforce

[2] We will include needs for these strategic objectives if identified but will not ask specifically for these needs.

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at
http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** TFL 47, Block 18, Teal Cedar Products Ltd.

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

TFL 47, Block 18, Teal Cedar Products Ltd.
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	200	200	100	100	100	33.00	6,600	1
Spacing	0	25	25	25	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Fertilizing	100	100	100	100	100	330.00	33,000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	300	325	225	225	200	132.00	39,600	
Planning and prescriptions							0	
Total dollars							39,600	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	250	0	0	0	0	100.00	25000	2
Totals hectares	250	0	0	0	0	100.00	25,000	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	25	25	25	25	25	3,000.00	75,000	1
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	25	25	25	25	25	2,999.88	75,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	200	200	100	100	100	33.00	6,600
Spacing	0	25	25	25	0	0.00	0
Pruning	0	0	0	0	0	0.00	0
Fertilizing	100	100	100	100	100	330.00	33,000
Other stand tending activities	275	25	25	25	25	363.63	100000
Totals hectares	575	325	225	225	200	242.78	139,600
Planning and prescriptions							0
Studies funding							0
Total dollars							139,600

TFL 47, Block 18, Teal Cedar Products Ltd.
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	100	100	100	100	0	33.00	3,300	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	#DIV/0!	0	
Brushing	50	50	50	50	50	1,200.00	60,000	1
Totals hectares	150	150	150	150	50	422.00	63,300	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							63,300	
Impeded areas								
Surveys	0	0	0	0	0	#DIV/0!	0	
Brushing	0	0	0	0	0	#DIV/0!	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	1,000	1030	0	0	0	1.00	1,000	1
Prescriptions and planning dollars							0	
Total site restoration							1,000	
Backlog Program Activities - Management Unit Total								
Surveys	100	100	100	100	0	33.00	3300	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	50	50	50	50	50	1,199.98	60000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	150	150	150	150	50	421.97	63300	
Seed purchase	1000	1030	0	0	0	1.00	1000	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							64,300	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

1/4/2006

TFL 47, Block 18, Teal Cedar Products Ltd.
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on Provincial Default Values

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.
Potential volume/ha gain (m3/ha/yr) provincial factors:

0.77	0	0	0	2.9	0.41	0.25	0	0.46	

Years the factor will affect:

0	65	65	65	65	65	65	65	65	

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.
Provincial factors for estimated value gain at harvest

						5-15%	15-30%	1-5%	

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.
Est. short term employment rate (person days/ha) provincial factors:

0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	Nursery Seedling Production	Silviculture Surveys
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	0		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	0		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			200
Total backlog surveys from the backlog table			100
33% of all silviculture surveys			99
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply		(A)	0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			99
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			1,000

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity 50

TFL 47, Block 18, Teal Cedar Products Ltd.
Performance Measures Based on Activities Planned for 2002/2003
Based on Provincial Default Values

	Performance Measure	Tree Improve-ment	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	0	0	99	0	0	50	0	0	100	524	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	1	1,333	0	0	3,000		4,333
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			1,000								1,000
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	0	0	10	0	0	131	0	0	18	52	
3.3	Estimated total full time equivalent positions (FTE)	0	0	0	0	0	1	0	0	0	0	1
4.1	**Forest Health Enhancement (ha)**											250
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											25
5.3	Est. area with secondary value provided to biodiversity (ha)											50

TFL 47, Block 18, Teal Cedar Products Ltd.
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	575	325	225	225	200	243	139,600
Planning, prescriptions and seedlings							0
Backlog Program Field Activities	150	150	150	150	50	422	63,300
Planning, prescriptions and seedlings							1,000
Totals	725	475	375	375	250		203,900

Performance Measures

Potential total merchentable volume increment in 65 years	4,333 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	1,000 ha
Estimated total full time equivalent positions generated	1 FTEs
Forest health enhancement area	250 ha
Planned area for specific wildlife forage or habitat maintenance	25 ha
Estimated area with secondary value provided to biodiversity	50 ha

RENEWAL INVESTMENT CORP.

Suite 3, 730 – 13th Avenue
Campbell River, B.C. V9W 4H1
Tel: (250) 286-3323 Fax: (250) 286-3320
bigfoot@haidagwaii.net

July 13, 2001

RMP Supporting Documentation: Teal Cedar Products Ltd. (TFL47 Block18)

Consultation with TFL 47 Block 18 staff provided the guidance in preparing this RMP. The following provides a summary of how the recommended silviculture program will be implemented:

Backlog Program

Surveys

The estimated area requiring brushing assessments is 100 ha for 2002/03.

Brushing

We are still anticipating a small brushing program (50 ha) mainly due to ingress of alder competition on portions of previously treated blocks. Some further areas might be discovered through surveys. Due to the uncertainty around alder ingress into blocks, a small level of brushing (50 ha) will continue to the scheduled. The purpose here is to account for the apparent need to retreat some blocks to maintain a free growing stand. This will continue to be a requirement unless the QCI district will allow more areas to contain a significant alder component after free growing.

Enhanced Program

Surveys

Enhanced surveys of 200 hectares per year will be needed to locate the annual treatment area for fertilization and riparian enhancement activities.

Fertilization

The focus of the 100 ha program will be to help low productivity stands meet free growing obligations and possibly initiate some SCHIRP fertilization areas.

Forest Health Enhancement

The other treatments scheduled for under Forest Health Enhancement have been estimated at 250 ha in anticipation of re-establishing stands that have been severely damaged by the black-headed budworm outbreak.

Habitat Supply and Biodiversity Enhancement

There are 25 ha of riparian treatments planned for the Lower Deena watershed area, with prescriptions for additional work in the future. The project will consist of alder over-story removal for conifer release, conifer seedling bank planting, and wildlife tree creation. There are 1000 seedlings identified in the backlog seed purchase for the bank-planting portion of the project.

2002/2003 – 2006/2007 Sustainable Harvest Component for the Sunshine Coast Forest District Resource Management Plan

1.0 Sunshine Coast Forest District TSA Resource Management Plan Summary For 2002/2003

This year's Resource Management Plan (RMP) was prepared using a similar approach to what was done in last year's plan with all TSA Licensees, the Ministry of Environment and district staff meeting directly to discuss and prepare this year's plan. Our district meeting was on July 10, 2001, and we reviewed last year's plan and agreed on the objectives and priorities for this year's plan. Prior to the meeting licensees were asked to review their backlog and enhanced activity programs as well, they were asked to review next years planned operations. The District generated ISIS reports identifying all backlog and enhanced activities that had been scheduled for the next five years, and made copies of these reports that were distributed and reviewed at the district RMP meeting.

Since the Type 2 Silviculture Analysis for the Sunshine Coast district was not completed, the supporting foundation of this year's RMP is again based on the district's Type 1 Analysis. During the district RMP meeting we reviewed the Type 1 Analysis and agreed with the original TSA product focus, and silviculture strategy objectives that were listed. The group recognized though that the goals by activity would have to be modified to reflect the new planned programs that had been identified. The Silviculture Regime and Investment Priority Table was reviewed and revised to reflect the RMP groups proposed treatment level changes for next year's and following years FRBC programs. The Type 1 Analysis and the revised Regime Table are included in this year's RMP package.

The highest priority activity in the TSA and district continues to be the elimination of all backlog reforestation treatments. Together with the licensees we reviewed every backlog non free growing opening in the TSA to ensure that treatment plans had been scheduled and that all openings will be free growing within the next five years. It was noted by most licensees that the remaining backlog blocks are in the most difficult locations and site conditions and would result in generally higher treatment costs compared to more current obligations. Backlog brushing and surveys continue to be the largest focus and priority within the backlog program with a minor amount of planting scheduled for next year.

The enhanced program will continue to focus on improving the overall quality of our second growth stands through spacing and pruning treatments on our low to mid elevation fir stands. Also a priority in this program will be to continue surveying future stands that are declared free growing to develop prescription for future treatments ensuring planned treatments are identified in advance of treatment delivery years. Second lift pruning are recognized as a priority in the district to ensure the initial first lift pruning investments are not lost. Fertilization of intensively managed stands younger stands will occur in next year's program and is supported as a treatment that will have a high financial return.

The major licensees and the Ministry of Environment continue to support Riparian and Habitat Enhancement treatments throughout the district and the Ministry of Environment will be assessing treatment priorities and objectives for the coming years. This year's RMP is a continuation of further pilots and trials in this area to assess treatment efficacy and costs. It was agreed that in order to move this program into an operational category more work identifying treatment objectives and priorities is needed.

Forest Health activities in the district are still valuable treatment and are included in this RMP. Forest Health activities including bridge tree removal in root disease areas, white pine pruning to control Blister Rust, and surveying and assessing immature stands for forest health agents continues to be an important activity for future work to ensure FRBC investments are not lost.

The planned program for next year and future years is similar in program size to previous years with only slight changes in some activities. The backlog program is much the same level as the previous year due to additional planned brushing that is anticipated from this years surveys. A similar surveying program to last year's is planned to reassess the remaining non free growing stands to ensure free growing will be achieved in the near future. It is anticipated that the backlog program will be significantly reduced in next years and future years programs as blocks are declared free growing. The enhanced program will be much the same program as last year with a slight reduction in planned spacing to ensure we focus on catching up on our outstanding second lift pruning as well as the introduction of a 600 hectare fertilization program.

The documentation for this RMP including the activity tables for each program, Silviculture Analysis and other supporting documentation for the TSA RMP as well as the RMPs and documentation for the TFL RMPs are included and attached in this district overall RMP package.

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** Sunshine Coast District Sum TSA & TFLs

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

Sunshine Coast District Sum TSA & TFLs
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1900	1850	1850	1850	1850	53.49	101625	
Spacing	875	900	900	900	900	1738.86	1521500	
Pruning	920	720	640	640	640	2009.13	1848400	
Fertilizing	1100	900	500	500	500	340.91	375000	
Other	0	0	0	0	0	0.00	0	
Totals hectares	4795	4370	3890	3890	3890	802.19	3,846,525	
Planning and prescriptions							12,500	
Total dollars							3,859,025	

Forest Health Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Spacing	40	40	30	30	30	1,699.92	68000	
Pruning	30	30	30	30	30	1,999.87	60000	
Other treatments	190	190	190	190	190	499.99	95000	
Totals hectares	260	260	250	250	250	857.67	223,000	

Habitat Supply and Biodiversity Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Riparian treatments	50	60	60	60	60	2,959.94	148000	
Non-riparian treatments	20	20	20	20	20	2,799.72	56000	
Totals hectares	70	80	80	80	80	2,914.16	204,000	

Domestic Range

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1900	1850	1850	1850	1850	53.49	101,625	
Spacing	915	940	930	930	930	1,737.15	1,589,500	
Pruning	950	750	670	670	670	2,008.84	1,908,400	
Fertilizing	1100	900	500	500	500	340.91	375,000	
Other stand tending activities	260	270	270	270	270	1,149.96	299000	
Totals hectares	5125	4440	3950	3950	3950	833.86	4,273,525	
Planning and prescriptions							12,500	
Studies funding							0	
Total dollars							4,286,025	

4.0 Sunshine Coast TSA
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Stand Tending								
Surveys	800	800	800	800	800	75.00	60000	1
Spacing	800	800	800	800	800	1700.00	1360000	1
Pruning	900	700	600	600	600	2000.00	1800000	1
Fertilizing	600	400	0	0	0	350.00	210000	2
Other	0	0	0	0	0	0.00	0	
Totals hectares	3100	2700	2200	2200	2200	1106.45	3,430,000	
Planning and prescriptions							0	
Total dollars							3,430,000	
Forest Health Enhancement								
Spacing	40	40	30	30	30	1,700.00	68000	2
Pruning	30	30	30	30	30	2,000.00	60000	2
Other treatments	190	190	190	190	190	500.00	95000	2
Totals hectares	260	260	250	250	250	857.69	223,000	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	10	10	10	10	10	2,800.00	28000	2
Non-riparian treatments	20	20	20	20	20	2,800.00	56000	2
Totals hectares	30	30	30	30	30	2,800.00	84,000	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	800	800	800	800	800	75.00	60,000	
Spacing	840	840	830	830	830	1,700.00	1,428,000	
Pruning	930	730	630	630	630	2,000.00	1,860,000	
Fertilizing	600	400	0	0	0	350.00	210,000	
Other stand tending activities	220	220	220	220	220	813.63	179000	
Totals hectares	3390	2770	2260	2260	2260	1,102.36	3,737,000	
Planning and prescriptions							0	
Studies funding							0	
Total dollars							3,737,000	

TFL 10
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities

Stand Tending

Stand Tending	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	150	100	100	100	100	40.00	6000	1
Spacing	25	50	50	50	50	2500.00	62500	1
Pruning	0	0	20	20	20	0.00	0	
Fertilizing	0	0	0	0	0	0.00	0	
Other	0	0	0	0	0	0.00	0	
Totals hectares	175	150	170	170	170	391.42	68,500	
Planning and prescriptions							5,000	1
Total dollars							73,500	

Forest Health Enhancement

Forest Health Enhancement	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Habitat Supply and Biodiversity Enhancement	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Riparian treatments	0	10	10	10	10	0.00	0	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	10	10	10	10	0.00	0	

Domestic Range

Domestic Range	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Enhanced Forestry Activities - Management Unit Total	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	150	100	100	100	100	40.00	6,000	
Spacing	25	50	50	50	50	2,499.90	62,500	
Pruning	0	0	20	20	20	0.00	0	
Fertilizing	0	0	0	0	0	0.00	0	
Other stand tending activities	0	10	10	10	10	0.00	0	
Totals hectares	175	150	170	170	170	391.41	68,500	
Planning and prescriptions							5,000	
Studies funding							0	
Total dollars							73,500	

TFL 39 - Sunshine Coast Forest District
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	950	950	950	950	950	37.50	35625	1
Spacing	50	50	50	50	50	1980.00	99000	2
Pruning	20	20	20	20	20	2420.00	48400	3
Fertilizing	500	500	500	500	500	330.00	165000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	1520	1520	1520	1520	1520	228.96	348,025	
Planning and prescriptions							7,500	1
Total dollars							355,525	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	40	40	40	40	40	3,000.00	120000	1
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	40	40	40	40	40	2,999.93	120,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	950	950	950	950	950	37.50	35,625	
Spacing	50	50	50	50	50	1,979.96	99,000	
Pruning	20	20	20	20	20	2,419.88	48,400	
Fertilizing	500	500	500	500	500	330.00	165,000	
Other stand tending activities	40	40	40	40	40	2,999.70	120000	
Totals hectares	1560	1520	1520	1520	1520	300.01	468,025	
Planning and prescriptions							7,500	
Studies funding							0	
Total dollars							475,525	

Sunshine Coast District Sum TSA & TFLs
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	50	10	20	20	0	75.00	3750	
Site preparation	0	0	0	0	0	0.00	0	
Planting	3	0	0	0	0	1,319.56	3960	
Brushing	30	30	20	20	0	1,154.92	34650	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	83	40	40	40	0	510.29	42,360	
Seed purchase	3600	0	0	0	0	0.50	1800	
Total legal obligations							44,160	
Backlog Reforestation								
Surveys	450	250	0	0	0	40.00	18000	
Site preparation	0	0	0	0	0	0.00	0	
Planting	20	10	0	0	10	1,259.94	25200	
Brushing	40	20	0	0	0	1,154.97	46200	
Totals hectares	510	280	0	0	10	175.29	89,400	
Seed purchase	12000	0	0	0	0	0.50	6,000	
Prescriptions and planning dollars							6,000	
Total backlog reforestation							101,400	
Impeded areas								
Surveys	450	300	50	0	0	75.00	33750	
Brushing	250	100	25	0	0	1,699.99	425000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	700	400	75	0	0	655.35	458,750	
Prescriptions and planning dollars							0	
Total impeded areas							458,750	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	20	20	10	0	0	2,199.78	44000	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	20	20	10	0	0	2,199.12	44,000	
Seed purchase	6,000	0	0	0	0	0.50	3,000	
Prescriptions and planning dollars							5,000	
Total site restoration							52,000	
Backlog Program Activities - Management Unit Total								
Surveys	950	560	70	20	0	58.42	55500	
Site preparation	20	20	10	0	0	2,199.12	44000	
Planting	23	10	0	0	10	1,267.39	29160	
Brushing	320	150	45	20	0	1,580.76	505850	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1313	740	125	40	10	483.24	634510	
Seed purchase	21600	0	0	0	0	0.50	10800	
Prescriptions and planning							11,000	
Recommended studies							0	
Total backlog program							656,310	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

4.0 Sunshine Coast TSA
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	#DIV/0!	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	#DIV/0!	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	10	0	0	0	0	1,200.00	12000	1
Brushing	0	0	0	0	0	#DIV/0!	0	
Totals hectares	10	0	0	0	0	1,199.88	12,000	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							12,000	
Impeded areas								
Surveys	450	300	50	0	0	75.00	33750	1
Brushing	250	100	25	0	0	1,700.00	425000	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	700	400	75	0	0	655.36	458,750	
Prescriptions and planning dollars							0	
Total impeded areas							458,750	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	450	300	50	0	0	75.00	33750	
Site preparation	0	0	0	0	0	0.00	0	
Planting	10	0	0	0	0	1,199.76	12000	
Brushing	250	100	25	0	0	1,699.99	425000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	710	400	75	0	0	663.02	470750	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							470,750	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

TFL 10
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							0	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

TFL 39 - Sunshine Coast Forest District
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	50	10	20	20	0	75.00	3750	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	3	0	0	0	0	1,320.00	3960	1
Brushing	30	30	20	20	0	1,155.00	34650	1
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	83	40	40	40	0	510.35	42,360	
Seed purchase	3600	0	0	0	0	0.50	1800	1
Total legal obligations							44,160	
Backlog Reforestation								
Surveys	450	250	0	0	0	40.00	18000	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	10	10	0	0	10	1,320.00	13200	1
Brushing	40	20	0	0	0	1,155.00	46200	1
Totals hectares	500	280	0	0	10	154.80	77,400	
Seed purchase	12000	0	0	0	0	0.50	6,000	
Prescriptions and planning dollars							6,000	1
Total backlog reforestation							89,400	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	20	20	10	0	0	2,200.00	44000	1
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	20	20	10	0	0	2,199.78	44,000	
Seed purchase	6,000	0	0	0	0	0.50	3,000	
Prescriptions and planning dollars							5,000	1
Total site restoration							52,000	
Backlog Program Activities - Management Unit Total								
Surveys	500	260	20	20	0	43.50	21750	
Site preparation	20	20	10	0	0	2,199.78	44000	
Planting	13	10	0	0	10	1,319.80	17160	
Brushing	70	50	20	20	0	1,154.98	80850	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	603	340	50	40	10	271.57	163760	
Seed purchase	21600	0	0	0	0	0.50	10800	
Prescriptions and planning							11,000	
Recommended studies							0	
Total backlog program							185,560	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Sunshine Coast District Sum TSA & TFLs
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

	Tree improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3) Estimates of annual growth rate increase from each type of treatment over no treatment. **Potential volume/ha gain (m3/ha/yr) provincial factors:**	0.77	0	0	0	2.9	0.41	0.25	0	0.46	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	
2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%. **Provincial factors for estimated value gain at harvest**							5-15%	15-30%	1-5%	
3) Corporate commitment to employment Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare. **Est. short term employment rate (person days/ha) provincial factors:**	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	**Nursery Seedling Production**	**Silviculture Surveys**
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	23		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	23		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			1,900
Total backlog surveys from the backlog table.			950
33% of all silviculture surveys			941
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply			(A) 0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			941
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity.

Sunshine Coast District Sum TSA & TFLs
Performance Measures Based on Activities Planned for 2002/2003
Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	23	0	941	20	23	320	915	950	1,100	4,552	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	4,397	8,528	14,869	0	33,000		60,794
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	2	0	94	19	46	835	3,623	4,313	198	455	
3.3	Estimated total full time equivalent positions (FTE)	0	0	1	0	0	5	20	24	1	3	53
4.1	**Forest Health Enhancement (ha)**											260
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											70
5.3	Est. area with secondary value provided to biodiversity (ha)											0

Sunshine Coast District Sum TSA & TFLs
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	5,125	4,440	3,950	3,950	3,950	834	4,273,525
Planning, prescriptions and seedlings							12,500
Backlog Program Field Activities	1,313	740	125	40	10	483	634,510
Planning, prescriptions and seedlings							21,800
Totals	6,438	5,180	4,075	3,990	3,960		4,942,335

Performance Measures

Potential total merchentable volume increment in 65 years	60,794 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	53 FTEs
Forest health enhancement area	260 ha
Planned area for specific wildlife forage or habitat maintenance	70 ha
Estimated area with secondary value provided to biodiversity	0 ha

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** 4.0 Sunshine Coast TSA

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

4.0 Sunshine Coast TSA
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities

Stand Tending

	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	800	800	800	800	800	75.00	60000	1
Spacing	800	800	800	800	800	1700.00	1360000	1
Pruning	900	700	600	600	600	2000.00	1800000	1
Fertilizing	600	400	0	0	0	350.00	210000	2
Other	0	0	0	0	0	0.00	0	
Totals hectares	3100	2700	2200	2200	2200	1106.45	3,430,000	
Planning and prescriptions							0	
Total dollars							3,430,000	

Forest Health Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Spacing	40	40	30	30	30	1,700.00	68000	2
Pruning	30	30	30	30	30	2,000.00	60000	2
Other treatments	190	190	190	190	190	500.00	95000	2
Totals hectares	260	260	250	250	250	857.69	223,000	

Habitat Supply and Biodiversity Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Riparian treatments	10	10	10	10	10	2,800.00	28000	2
Non-riparian treatments	20	20	20	20	20	2,800.00	56000	2
Totals hectares	30	30	30	30	30	2,800.00	84,000	

Domestic Range

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	800	800	800	800	800	75.00	60,000	
Spacing	840	840	830	830	830	1,700.00	1,428,000	
Pruning	930	730	630	630	630	2,000.00	1,860,000	
Fertilizing	600	400	0	0	0	350.00	210,000	
Other stand tending activities	220	220	220	220	220	813.63	179000	
Totals hectares	3390	2770	2260	2260	2260	1,102.36	3,737,000	
Planning and prescriptions							0	
Studies funding							0	
Total dollars							3,737,000	

4.0 Sunshine Coast TSA
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	#DIV/0!	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	#DIV/0!	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	10	0	0	0	0	1,200.00	12000	1
Brushing	0	0	0	0	0	#DIV/0!	0	
Totals hectares	10	0	0	0	0	1,199.88	12,000	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							12,000	
Impeded areas								
Surveys	450	300	50	0	0	75.00	33750	1
Brushing	250	100	25	0	0	1,700.00	425000	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	700	400	75	0	0	655.36	458,750	
Prescriptions and planning dollars							0	
Total impeded areas							458,750	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	450	300	50	0	0	75.00	33750	
Site preparation	0	0	0	0	0	0.00	0	
Planting	10	0	0	0	0	1,199.76	12000	
Brushing	250	100	25	0	0	1,699.99	425000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	710	400	75	0	0	663.02	470750	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							470,750	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

4.0 Sunshine Coast TSA
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.77	0	0	0	2.9	0.41	0.25	0	0.46	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	
Provincial factors for estimated value gain at harvest							5-15%	15-30%	1-5%	
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area: Tree Improvement	Area: Nursery Seedling Production	Area: Silviculture Surveys
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	10		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	10		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			800
Total backlog surveys from the backlog table.			450
33% of all silviculture surveys			413
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply		(A)	0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			413
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			10
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			200

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity. 30

4.0 Sunshine Coast TSA
Performance Measures Based on Activities Planned for 2002/2003
Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	10	0	413	0	10	250	840	930	600	3,273	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	1,911	6,663	13,650	0	18,000		40,224
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			10								10
1.5	Est. area that will be declared as free growing (ha)			200								200
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	1	0	41	0	20	653	3,326	4,222	108	327	
3.3	Estimated total full time equivalent positions (FTE)	0	0	0	0	0	4	18	23	1	2	48
4.1	**Forest Health Enhancement (ha)**											260
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											30
5.3	Est. area with secondary value provided to biodiversity (ha)											30

4.0 Sunshine Coast TSA
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	3,390	2,770	2,260	2,260	2,260	1,102	3,737,000
Planning, prescriptions and seedlings							0
Backlog Program Field Activities	710	400	75	0	0	663	470,750
Planning, prescriptions and seedlings							0
Totals	4,100	3,170	2,335	2,260	2,260		4,207,750

Performance Measures

Potential total merchentable volume increment in 65 years	40,224 m^3
Estimated ha that will be reclassified as stocked	10 ha
Estimated ha that will be declared as free growing	200 ha
Estimated total full time equivalent positions generated	48 FTEs
Forest health enhancement area	260 ha
Planned area for specific wildlife forage or habitat maintenance	30 ha
Estimated area with secondary value provided to biodiversity	30 ha

3.0 TSA Silviculture Regimes and Investment Priorities for SCFD

The following table indicates incremental silviculture regimes which are suitable to attaining the above working targets and strategies

Regime Table, Sunshine Coast TSA, July 2001

	ha/yr	Timber Supply Effects			Quality	Habitat			Direct Silv Jobs Days/ ha	Cost $/ha	Rank (1,2,3)
		Short	Medium	Long		OG	Rip	Wlife			
1.Backlog Brushing	250	0 A+	A+		0	0	0	0	2	1700	1
Backlog Planting	10	0	A+	A+	0				2	1200	1
Backlog Surveys	450	0	-	-	0				.03	75	1
2. Spacing @15-20yrs											
M-G FHC low elevation - 600-700 sph	500	0	+	-	++	+	+	+	5	1700	2
M-G FHC mid elevation - 600-700 sph	200	0 -	+		++	+ +	+		5	1700	2
M-G HCB mid- upper elevation- 600-700sph	100	0	+	-	++	+ +	+		5	1700	3
2b Enhanced Surveys and Prescriptions	800	0			0	0			.03	75	1
3. Pruning											
. FH low -mid elevation (previously spaced) - all stems, 1st lift to 3.1 m	500	0	0	0	+++	0 +			6	1800	4
. all stems, 2nd lift to 5.5-6.0 m	400	0	0	0	+++	0		+	8	2500	2
4. Fertilization											
M-G FHC spaced	600	0	++	++	0	+		0	.1	350	3
CT'ed stands		+			0	+		0	.1	350	4
5..Health-bridge tree removal, white pine operational trails ,treatments and surveys	260	0	+	+		0	0	0	1	203	4
6.0 Riparian and Habitat enhancement	30	0	+	+	0	+	+	+	6	2800	3

Notes

1 A-type timber supply effects are incorporated in the TSR base case
B type timber supply effects are incremental to the TSR base case
2 General Ranking: H =1 & 2; M = 3; L = 4 & 5

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): 10.0 Sunshine Coast Forest District TSA

Stand Tending	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	1500	800	-46.7	1	1	33	75	127.3	Less surveys planned at a costs that reflects survey,layout and prescription costs
Spacing	1200	800	-33.3	1	1	1980	1700	-14.1	Less spacing planned to allow a greater emphasis on pruning
Pruning	650	900	38.5	1	1	2420	2000	-17.4	Experienced costs suggest pruning costs will be less than what was planned for last year
Fertilizing	0	600	#DIV/0!	1	1	330	350	6.1	

Forest Health	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)
Spacing	40	40	0.0	1	2	1980	1700	-14.1	
Pruning	30	30	0.0	0	0	2420	2000	-17.4	White Pine pruning costs in the district are lower than regular operational pruning
Habitat Supply/ Biodiversity									
Riparian	10	10	0.0	2	2	3000	2800	-6.7	
Non-Riparian	20	20	0.0	2	2	3000	2800	-6.7	

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): **TSA**

	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (include separate attachment if more space necessary with reference #)
Legal Obligation									
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site preparation	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
B/L Reforestation									
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site Prep	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting		10	#DIV/0!	1	1	1320	1200	-9.1	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	

	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (include separate attachment if more space necessary with reference #)
Impeded									
Surveys	300	450	50	0	0	33	75	127.3	Costs indicated are more accurate and include layout and prescription costs. More surveys required than what was planned last year.
brushing	200	100	-50	0	0	1155	1700	47.2	Less brushing anticipated this year than what was planned in last years plan and costs reflect actual experience costs.
Site Resoration									
Fill planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Rehab	0	0	#DIV/0!	0	0	2200	n/a	#VALUE!	
Reforestation	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	

Agency:
TFL:
TSA: **Sunshine Coast**

6.0 Communication Log for the Sustainable Harvest Objective 2002-2003

(also include community/stakeholder meetings to review silviculture strategies and SH plans)

Date	***Name (person contacted)***	***Representing***	***Communication Method***	***Comments/Issues***
May-01	John Pezel	Western	e-mail and phone	Discussued timelines and process for this year's RMP.
	Nigel Ross	Interfor		
	Warren Hasen	Canfor		
	John Calrk	Terminal		
	Mike Younie	MOE		
	Marrion Blanke	Weyco		
Jun-01	Same as above	Same as Above	e-mail	Further direction on RMP process and reminder of meeting
July 10/01	Same as Above	Same as Above	Direct Meeting	Reviewed last year's RMP and prepared and discussed this year's RMP.

TFL 10 2001 – 2002

Resource Management Plan

June 20, 2001

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7. Proposed TFL Studies Form...10

Preface

TFL 10 is in a unique position in that access to two thirds of the land base is unavailable due to a dispute with Interfor and the Klahoose First Nation. This situation has been taken into account in the timber supply analysis and the Silviculture Type 1 Analysis. The information presented in Sections 1 and 3 of this Resource Management Plan is taken directly from the Type 1 Silviculture Analysis and therefore represents the entire TFL landbase. The information presented in section 4 (SH Data Template) and section 6. (TFL Plan Comparison) is just for the accessible portion of the TFL.

1. Incremental Silviculture Strategy

This Incremental Silviculture Strategy is part of the TFL 10 Type I Analysis done by Timberline Forest Consultants in March 2001.

General Strategy

As stated earlier, short and medium term timber flow on TFL 10 is constrained by timber availability at decade 15. Because of the timing of this constraint, opportunity exists to enhance timber supply prior to this point. Generally, any strategy, which increases timber availability prior to decade 15, will have a positive impact on mid term timber flow. Tactics, which accelerate the development of managed stands, are particularly important in this regard. These tactics impact on timber availability in three positive fashions:

Reduced time to greenup;

Reduced minimum harvest ages; and

Increased yields at rotation.

Quality targets have not been explicitly established for TFL 10. Several of the silviculture tactics identified for improvement of quantity are also expected to have a positive impact on quality. In addition, pruning could be implemented specifically to improve the supply of premium log grades. However, the cost of such a program is substantial, and more explicit definition on quality objectives should be completed prior to undertaking a pruning program.

Working Targets

The preceding analysis indicates the following working target is attainable:

Maintain the existing AAC (171,000 m^3) for a period of 40 years;

Improve mid-term level by approximately 5000 m^3 over the base case and

Achieve a long-term level of 123,400 m^3 (13,400 m^3) over the base case).

Log Product Objectives

As stated, log product quality objectives have not been explicitly developed for TFL 10.

2. TFL Enhanced and Backlog Program Issues

A large portion of TFL 10 has severe access problems. Approximately two thirds of the TFL is located at the Head of Toba Inlet and the only access into this valley in through the Klahoose Indian Reserve. For a number of reasons the Klahoose First Nation and Interfor have not been able to come to a TFL access agreement. This means that vehicle access into this part of the TFL is not available and that projects could only be undertaken by helicopters. This problem effectively prevents cost efficient silvicultural projects from occurring at the Head of the Inlet. Fortunately there appears to be very few backlog issues to be dealt with beyond the Klahoose Reserve.

In addition to the Head of the Inlet there does not appear to be any backlog issues in other parts of the TFL. This TFL has not received very much attention lately and there are not very many people that have a lot of local knowledge. There may be some backlog opportunities in the accessible portions of the TFL but they will most likely be small and scattered.

This is an isolated TFL and access if difficult in almost all of the areas. In addition to the Head of Inlet there are severe access problems in other parts of the TFL. Chusan and Mack Creek have had significant road deactivation . Nor Creek and Tahumming are isolated small drainages that are only accessible by boat. Brem River is the only portion of the TFL that has an active camp with reasonable road access.

3. *Silviculture Regimes and Investment Priorities*

The following table indicates incremental silviculture regimes which are suitable for attaining the working targets and strategies identified in section 1 - Incremental Silviculture Strategy . This table was taken from the TFL 10 Type 1 Silviculture Analysis (Timberline Forest Consultanmts, March 2001).

Regime Table: TFL 10

Treatment		**Location**	**Ha/yr**	**Timber Supply**			**Quality**	**Habitat**			**Direct Jobs**	**Direct Cost**	**Priority**
				Sh	**Me**	**Lo**		**OG**	**RI**	**W**	**Days/ha**	**$/ha**	
	Surveys	Throughout	380								0.1	55	1
IM 1	Nothing Identified												
ST 1	Nothing Identified												
MT 1	Spacing-timber (1)	Throughout	60	0	+	0	+	+	+	+	4	2000	1
MT 2	Fertilization-late rotation	Throughout	80	0	+	+	+	0	0	0	0.1	300	2
Q 1	Pruning	Throughout	20	0	0	0	+	0	0	+	12	4500	4
H 1	Variable retention harvesting*	Throughout	120	-	-	-	+	+	+	+	3	3000	1
H 2	Spacing-rma	Throughout	10	0	0	0	0	+	+	+	4	2000	3

*Variable retention harvesting is not eligible for FRBC funding

(1) Juvenile Spacing Regimes

Analysis Unit/Site	Elevation	Initial Density	Well-spaced stems	Space	Relative Rank
FHC/good	Low	>2000	>700	700-800	2
FHC/medium	Low-mid	>3200	>800	700-900	1
CH/good/medium	Low	>2500	>600	500-700	2
CH/medium	Mid	>3500	>800	800-1200	3
HCB/good	Low-mid	>3000	>800	800-1000	2
HCB/medium	Mid-upper	>5000	>850	1000-1200	4

Treatment of poor sites will be done in conjunction with productive sites when the treatment benefits wildlife habitat objectives.

General Ranking: H=1 & 2; M=3; L=4 & 5

4. SH Data Template

See attached Excel files.

5. Communication Log

Agency:
TFL: TFL 10
TSA:

Communication Log for the Sustainable Harvest Objective
2002-2003

This plan was prepared by Interfor and Jamie Killackey. No other parties were contacted.

Date	***Name (person contacted)***	***Representing***	***Communication Method***	***Comments/Issues***

6. TFL Plan Comparison

The TFL Plan Comparison can be found on the attached Excel files.

7. Proposed TFL Studies Form

No studies are being proposed for this TFL.

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** TFL 10

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

TFL 10
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	150	100	100	100	100	40.00	6000	1
Spacing	25	50	50	50	50	2500.00	62500	1
Pruning	0	0	20	20	20	0.00	0	
Fertilizing	0	0	0	0	0	0.00	0	
Other	0	0	0	0	0	0.00	0	
Totals hectares	175	150	170	170	170	391.42	68,500	
Planning and prescriptions							5,000	1
Total dollars							73,500	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	0	10	10	10	10	0.00	0	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	10	10	10	10	0.00	0	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	150	100	100	100	100	40.00	6,000	
Spacing	25	50	50	50	50	2,499.90	62,500	
Pruning	0	0	20	20	20	0.00	0	
Fertilizing	0	0	0	0	0	0.00	0	
Other stand tending activities	0	10	10	10	10	0.00	0	
Totals hectares	175	150	170	170	170	391.41	68,500	
Planning and prescriptions							5,000	
Studies funding							0	
Total dollars							73,500	

TFL 10
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	

Backlog Reforestation

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	

Impeded areas

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	

Site Restoration

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	

Backlog Program Activities - Management Unit Total

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							0	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

1/4/2006

TFL 10
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.
Potential volume/ha gain (m3/ha/yr) provincial factors:

0.77	0	0	0	2.9	0.41	0.25	0	0.46

Years the factor will affect:

0	65	65	65	65	65	65	65	65

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.
Provincial factors for estimated value gain at harvest

5-15%	15-30%	1-5%

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.
Est. short term employment rate (person days/ha) provincial factors:

0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	**Nursery Seedling Production**	**Silviculture Surveys**
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	0		
Enter area of all other sites planted with improved trees	0		
Total area affected by tree improvement	0		
B Nursery production of seedlings			
Enter sowing requests from SPAR		0	
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			150
Total backlog surveys from the backlog table.			0
33% of all silviculture surveys			50
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			0
Estimate area of free growing surveys			0
Estimate area of pre-stand tending surveys			150
Estimate of total surveys that will affect timber supply		(A)	150
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			150
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			0
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			0

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity.

TFL 10
Performance Measures Based on Activities Planned for 2002/2003
Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improve-ment	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	0	0	150	0	0	0	25	0	0	175	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	1	0	406	0	0		407
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	0	0	15	0	0	0	99	0	0	18	
3.3	Estimated total full time equivalent positions (FTE)	0	0	0	0	0	0	1	0	0	0	1
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											0
5.3	Est. area with secondary value provided to biodiversity (ha)											0

TFL 10
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	175	150	170	170	170	391	68,500
Planning, prescriptions and seedlings							5,000
Backlog Program Field Activities	0	0	0	0	0	0	0
Planning, prescriptions and seedlings							0
Totals	175	150	170	170	170		73,500

Performance Measures

Potential total merchentable volume increment in 65 years	407 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	1 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	0 ha
Estimated area with secondary value provided to biodiversity	0 ha

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): TFL 10

Stand Tending	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	0	150	#DIV/0!	0	1	33	40	21.2	Cost per ha, remote location small program
Spacing	0	25	#DIV/0!	0	1	1980	2500	26.3	Cost per Ha, remote location small program
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Fertilizing	0	0	#DIV/0!	0	0	330	n/a	#VALUE!	

Forest Health	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)
Spacing	0	0	#DIV/0!	0	0	1980	n/a	#VALUE!	
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Habitat Supply/ Biodiversity									
Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	
Non-Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): TFL 10

	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Legal Obligation									
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site preparation	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
B/L Reforestation									
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site Prep	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Impeded									
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
Site Resoration									
Fill planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Rehab	0	0	#DIV/0!	0	0	2200	n/a	#VALUE!	
Reforestation	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	

8.0 Evaluation Rating of TFL/TSA **TFL 10** **Sustainable Harvest RMP**

Category	yes	partly	no	Rating (H, M, L)
Submitted by June 27 (TFL) or July 16 (TSA).	X			H
Basic data for TFL provided, area, current AAC, current harvest forecast, site/age class species profile. Long Run Sustainable Yield stated.	X			H
History of past treatments provided.	X			H
Text submitted identifying backlog and enhanced forestry program issues.	X			H
Opportunities to increase timber supply addressed in text, e.g. short/mid/long-term, timber flow benefits. Consistent with Type 1 or 2 Analysis.	X			M
Opportunities to increase timber value addressed in text, if none so stated. Consistent with Type 1 or 2 Analysis.	X			
Opportunities to increase habitat supply/biodiversity addressed in text, if none so stated. Consistent with Type 1 or 2 Analysis.			X	L
Working targets proposed for volume/value/habitat.	X			H
Satisfactory treatment regime provided	X			H
Satisfactory rationale provided for the priority ranking of activities i.e. link to MP ,TSR, other . Consistent with Type 1 or 2 Analysis.	X			H
Where habitat supply/biodiversity activity indicated, rationale on why the silviculture treatment specifically maintains the non-timber values.			X	l
All summary tables submitted satisfactorily.	X			H
Projected job outcome of proposed program stated.	X			H
Opportunities to achieve FRBC performance goals Is program within reasonable range of last year's SH RMP projections for year 2002/03. Plan Comparison Table submitted with explanation for variations.	X			L
Performance measures,…where TFL used local factors supporting rationale provided.	X			H
SH study form completed satisfactorily	X			H
Communication log documents partnership group and stakeholder discussions and issues.	X			H
Other (describe)				
Overall rating	m-h	n/a	n/a	m-h

WEYERHAEUSER COMPANY LIMITED

Tree Farm Licence 39

Sustainable Harvest RMP for 2002/2003

June, 2001

Prepared by:

Renewal Investment Corp.
Suite 3, 730 – 13th Avenue
Campbell River, BC
V9W 4H1

(250) 286-3323

Weyerhaeuser Company Limited
Sustainable Harvest RMP 2002/2003
TFL 39

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- Strategy
- Tables
- 2001/2002 Plan Comparison

Executive Summary

This report describes a Type 2 timber supply analysis of incremental silviculture opportunities in TFL 39, held by Weyerhaeuser Company Ltd. The analysis uses the Forest Service Simulator (FSSIM) to assess interactions between silviculture and timber supply. The analysis assumes static, current conditions for relative timber values and social use of the forest.

The analysis inspects a broad range of incremental silviculture treatments, as identified at two workshops held with Forest Renewal BC, Ministry of Forests and Weyerhaeuser foresters. Specific treatments and treatment combinations (regimes) are tested for their ability to meet timber quality, harvest level, and wildlife habitat objectives. Some treatments are found to have negative impacts, while others are substantially positive. Table 9 provides a ranking of the treatment alternatives.

The analysis demonstrates that if all identified suitable forest areas were treated according to discussions at the workshop and corresponding assumptions in the analysis, $16.1 million might be spent annually in TFL 39 on incremental silviculture activities. From among these candidate investments, a recommended silviculture program with a budget of $3.8 million is presented in Table 11. This budget level is a 25% increase from recent silviculture levels in TFL 39.

Investment of $3.8 million will increase future harvest levels by 3.4%, or 114,000 m^3/yr. The investment will also improve visual scenery values. Approximately 15% of the budget is allocated to wildlife habitat restoration. Incremental silviculture activities will directly create an estimated 35 full time equivalent jobs. Increased harvest levels will result in 210 direct and indirect jobs within 20 years and 480 jobs in the longer term. Including income taxes and stumpage fees, government will realize a return of $7.8 million from the investment.

There are many uncertainties inherent in such an analysis, including stand responses to silviculture, selection of appropriate treatment areas, and economic assumptions projected over long time horizons. The analysis attempts to make reasonable estimates within the scope of the existing information.

Weyerhaeuser Company Limited, TFL 39
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on Type 1, Type 2 silviculture strategy & Provincial Default Values

The following default provincial factors may be replaced by management unit specific factors.

The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)

Estimates of annual growth rate increase from each type of treatment over no treatment.

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.71	0	0	0	2.9	0.63	0	0	0.42	
Years the factor will affect:	65	65	65	65	65	65	65	65	65	

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Provincial factors for estimated value gain at harvest							5-15%	15%	5%	

3) Corporate commitment to employment

Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	1.5	2	2.43	4.14	5.5	0.18	0.1

RENEWAL INVESTMENT CORP.

Suite 3, 730 – 13th Avenue
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Tel: (250) 286-3323 Fax: (250) 286-3320

June 19, 2001

RMP Supporting Documentation: Weyerhaeuser Operations (block 1) within Sunshine Coast Forest District

The Type 2 timber supply analysis of incremental silviculture opportunities in TFL 39, prepared March, 2001 and the draft Management Plan # 8 provided the guidance in preparing this RMP.

The following provides a summary of how the recommended silviculture program from the Type 2 analysis will be implemented:

Backlog Program

Surveys
The anticipated area requiring free growing surveys and brushing assessments is 250 ha for 2002/03. Although the backlog surveys are targeted for completion in 2001/02, some remaining free growing surveys, brushing surveys, and other miscellaneous assessments of ongoing projects (i.e. backlog SPs obligations) will be required to ensure all backlog obligations are addressed.

Planting
Very little backlog planting has been identified and it is difficult to find NSR areas where cost/benefit analysis suggests a worthy investment. However, some areas may be identified through the 2001/02 free growing surveys and assessments of areas with a high incidence of snow damage that occurred in 1998-1999. Approximately 3 ha under legal obligation have been scheduled for 2002/2003 and 10 ha per year have been scheduled under backlog for 2002/03 and 2003/2004, with no further scheduling in the last 3 years.

Brushing
It is increasingly difficult to find suitable areas requiring brushing or alder girdling, as most of these backlog areas have been treated. Some areas may be identified through the 2001/02 free growing surveys. Approximately 30 ha are estimated to be under legal obligation for brushing in 2002/2003 and 20 ha under backlog reforestation for brushing in 2002/2003. Brushing was given the highest ranking with the Type 2 analysis.

Site Rehabilitation
Approximately 20 ha of rehabilitation treatments are recommended for stands that are currently performing poorly due to either a very high incidence of snow damage, offsite trees (genetic maladaptation), or a high incidence of spruce weevil (*Pissodes strobi*).

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Enhanced Program

Riparian Treatments

Approximately 40 ha of riparian treatments have been identified for treatment in 2002/2003. Riparian enhancement spacing was given a high ranking in the Type 2 analysis with the expectation that landscape unit planning processes will attribute this activity a positive effect on timber supply.

Surveys

Enhanced surveys of 950 hectares per year will be needed to locate the annual treatment area (610 ha) for the enhanced activities of spacing, pruning, fertilization, and riparian enhancement spacing activities.

Spacing

Approximately 50 ha of spacing is anticipated within 2 of the 3 spacing regimes as outlined in the Type 2 analysis:

1. Species conversion for intensive Fdc management. At approximately 14 years of age, juvenile space Fdc plantations to remove the hemlock trees that have naturally seeded in. Space stands with a SI> 27m to 1200 sph. Follow with fertilization and possibly pruning. Most of the target stands over the next few years will come from appraisal stands recently declared free growing. Red cedar will also be a favoured species within this regime.
2. Space hemlock stands >8,000 sph with SI > 27m to densities of 1200-1500 sph. With this regime also favour alternative species such as Cw and Fdc.

Pruning

Pruning goals are 20 hectares per year with a target pruning density of 800 sph and ranked as follows:

1. Previously 1st lift pruned Douglas-fir
2. Spaced Douglas-fir stands with 800 sph on good and high sites.

Pruning is considered a low priority in the Type 2 analysis.

Fertilization

The focus of the 500 ha program will be late rotation fertilization of Douglas-fir stands with a three-time fertilizer boost before final harvest. Fertilization priority is:

1. Douglas fir stands with site index >27 scheduled for harvest with 7-10 years will be targeted primarily.
2. Fdc stands 14 years from harvest, that could be fertilized in two passes.
3. Fdc stands 21 years from harvest that could be fertilized within three passes.

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** TFL 39 - Weyerhaeuser Company Ltd.

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

TFL 39 - Weyerhaeuser Company Ltd.
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities

Stand Tending

	Treatment Area Goals (ha)					Plan 2002/03			
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority	
Surveys	5530	5480	5480	5480	5480	34.38	190125	1	2
Spacing	415	465	465	465	465	1913.98	794300	2	
Pruning	60	60	60	60	60	2433.29	146000	3	
Fertilizing	2250	2250	2250	2250	2250	380.67	856500	1	
Other	15	15	15	15	15	5331.91	80000	1	
Totals hectares	8270	8270	8270	8270	8270	249.93	2,066,925		
Planning and prescriptions	0	0	0	0	0		91500	1	2
Total dollars							2,158,425		

Forest Health Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Spacing	50	50	50	50	50	1,799.86	90000	2
Pruning	50	50	50	50	50	2,419.81	121000	2
Other treatments	500	500	500	500	500	50.00	25000	2
Totals hectares	600	600	600	600	600	393.33	236,000	

Habitat Supply and Biodiversity Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Riparian treatments	280	185	90	90	90	3,000.00	840000	1
Non-riparian treatments	0	95	150	150	150	0.00	0	
Totals hectares	280	280	240	240	240	2,999.95	840,000	

Domestic Range

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	5530	5480	5480	5480	5480	34.38	190,125	
Spacing	465	515	515	515	515	1,901.70	884,300	
Pruning	110	110	110	110	110	2,427.16	267,000	
Fertilizing	2250	2,250	2,250	2,250	2,250	380.67	856,500	
Other stand tending activities	795	795	755	755	755	1,188.65	945000	
Totals hectares	9150	8355	8355	8355	8355	343.49	3,142,925	
Planning and prescriptions							91,500	
Studies funding	Fert Regimes $28k, B/H Budworm $50k, Deer Browse $10k						88000	1&2
Total dollars							3,322,425	

TFL 39 - Block 1 - Sunshine Coast District
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities

Stand Tending

	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	950	950	950	950	950	37.50	35625	1
Spacing	50	50	50	50	50	1980.00	99000	2
Pruning	20	20	20	20	20	2420.00	48400	3
Fertilizing	500	500	500	500	500	330.00	165000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	1520	1520	1520	1520	1520	228.96	348,025	
Planning and prescriptions							7,500	1
Total dollars							355,525	

Forest Health Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Riparian treatments	40	40	40	40	40	3,000.00	120000	1
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	40	40	40	40	40	2,999.93	120,000	

Domestic Range

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	950	950	950	950	950	37.50	35,625	
Spacing	50	50	50	50	50	1,979.96	99,000	
Pruning	20	20	20	20	20	2,419.88	48,400	
Fertilizing	500	500	500	500	500	330.00	165,000	
Other stand tending activities	40	40	40	40	40	2,999.70	120000	
Totals hectares	1560	1520	1520	1520	1520	300.01	468,025	
Planning and prescriptions							7,500	
Studies funding							0	
Total dollars							475,525	

TFL 39 - Blocks 2&5 - Campbell River District
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	3200	3200	3200	3200	3200	33.00	105600	1
Spacing	185	185	185	185	185	1980.00	366300	2
Pruning	20	20	20	20	20	2420.00	48400	3
Fertilizing	1300	1300	1300	1300	1300	330.00	429000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	4705	4705	4705	4705	4705	201.76	949,300	
Planning and prescriptions							60,000	1
Total dollars							1,009,300	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	120	45	0	0	0	3,000.00	360000	1
Non-riparian treatments	0	75	120	120	120	0.00	0	
Totals hectares	120	120	120	120	120	2,999.98	360,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	3200	3200	3200	3200	3200	33.00	105,600	
Spacing	185	185	185	185	185	1,979.99	366,300	
Pruning	20	20	20	20	20	2,419.88	48,400	
Fertilizing	1300	1,300	1,300	1,300	1,300	330.00	429,000	
Other stand tending activities	120	120	120	120	120	2,999.90	360000	
Totals hectares	4825	4705	4705	4705	4705	271.36	1,309,300	
Planning and prescriptions							60,000	
Studies funding	Fertilization Regimes						28000	1
Total dollars							1,397,300	

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TFL 39 - Blocks 3&4 - Port McNeill District
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1000	1000	1000	1000	1000	33.00	33000	1
Spacing	60	60	60	60	60	1650.00	99000	2
Pruning	10	10	10	10	10	2420.00	24200	3
Fertilizing	350	350	350	350	350	550.00	192500	1
Other	15	15	15	15	15	5333.33	80,000	1
Totals hectares	1435	1435	1435	1435	1435	298.75	428,700	
Planning and prescriptions							20,000	1
Total dollars							448,700	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	30	10	0	0	0	3,000.00	90000	1
Non-riparian treatments	0	20	30	30	30	0.00	0	
Totals hectares	30	30	30	30	30	2,999.90	90,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	1000	1000	1000	1000	1000	33.00	33,000	
Spacing	60	60	60	60	60	1,649.97	99,000	
Pruning	10	10	10	10	10	2,419.76	24,200	
Fertilizing	350	350	350	350	350	550.00	192,500	
Other stand tending activities	45	45	45	45	45	3,777.53	170000	
Totals hectares	1465	1420	1420	1420	1420	354.06	518,700	
Planning and prescriptions							20,000	
Studies funding							0	
Total dollars							538,700	

TFL 39 - Block 7 - Mid Coast District
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities

Stand Tending

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	80	80	80	80	80	75.00	6000	2
Spacing	20	20	20	20	20	2500.00	50000	2
Pruning	10	10	10	10	10	2500.00	25000	3
Fertilizing	0	0	0	0	0	0.00	0	
Other	0	0	0	0	0	0.00	0	
Totals hectares	110	110	110	110	110	736.35	81,000	
Planning and prescriptions							4,000	2
Total dollars							85,000	

Forest Health Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Riparian treatments	10	10	10	10	10	3,000.00	30000	1
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	10	10	10	10	10	2,999.70	30,000	

Domestic Range

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	80	80	80	80	80	75.00	6,000	
Spacing	20	20	20	20	20	2,499.88	50,000	
Pruning	10	10	10	10	10	2,499.75	25,000	
Fertilizing	0	0	0	0	0	0.00	0	
Other stand tending activities	10	10	10	10	10	2,998.80	30000	
Totals hectares	120	110	110	110	110	924.95	111,000	
Planning and prescriptions							4,000	
Studies funding							0	
Total dollars							115,000	

TFL 39 - Block 6 - Queen Charlottes District
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	300	250	250	250	250	33.00	9900	1
Spacing	100	150	150	150	150	1800.00	180000	2
Pruning	0	0	0	0	0	0.00	0	
Fertilizing	100	100	100	100	100	700.00	70000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	500	500	500	500	500	519.80	259,900	
Planning and prescriptions							0	
Total dollars							259,900	

Forest Health Enhancement

Spacing	50	50	50	50	50	1,800.00	90000	2
Pruning	50	50	50	50	50	2,420.00	121000	2
Other treatments	500	500	500	500	500	50.00	25000	2
Totals hectares	600	600	600	600	600	393.33	236,000	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	80	80	40	40	40	3,000.00	240000	1
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	80	80	40	40	40	2,999.96	240,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	300	250	250	250	250	33.00	9,900	
Spacing	150	200	200	200	200	1,800.00	270,000	
Pruning	50	50	50	50	50	2,419.95	121,000	
Fertilizing	100	100	100	100	100	700.00	70,000	
Other stand tending activities	580	580	540	540	540	456.89	265000	
Totals hectares	1180	600	600	600	600	623.64	735,900	
Planning and prescriptions							0	
Studies funding	(Blackheaded Budworm $50K, Deer Browse $10K)						60000	2
Total dollars							795,900	

1/4/2006

TFL 39 - Weyerhaeuser Company Ltd.
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	189	136	96	96	76	48.47	9161	1
Site preparation	5	5	5	5	5	1,648.68	8250	1
Planting	23	20	0	0	0	1,911.06	43960	1
Brushing	56	30	46	20	0	1,150.81	64449	1
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	273	191	147	121	81	460.85	125,820	
Seed purchase	15600	12000	0	0	0	0.50	7800	1
Total legal obligations							133,620	
Backlog Reforestation								
Surveys	4450	1900	1200	1200	1200	36.07	160500	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	70	70	50	50	60	1,805.69	126400	1
Brushing	540	525	155	150	150	1,196.66	646200	1
Totals hectares	5060	2495	1405	1400	1410	184.41	933,100	
Seed purchase	48000	36000	30000	30000	30000	0.56	27000	1
Prescriptions and planning dollars							30500	1
Total backlog reforestation							990,600	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	30	30	30	30	30	1,154.88	34650	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	30	30	30	30	30	1,154.50	34,650	1
Prescriptions and planning dollars							3500	
Total impeded areas							38,150	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	20	20	10	0	0	2,199.56	44000	1
Reforestation	20	20	20	20	20	1,319.74	26400	2
Totals hectares	40	40	30	20	20	1,759.43	70,400	
Seed purchase	18000	12000	12000	12000	12000	0.50	9000	2
Prescriptions and planning dollars							5000	1
Total site restoration							84,400	
Backlog Program Activities - Management Unit Total								
Surveys	4639	2036	1296	1296	1276	36.57	169661	
Site preparation	25	25	15	5	5	2,088.91	52250	
Planting	113	110	70	70	80	1,741.04	196760	
Brushing	626	585	231	200	180	1,190.56	745299	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	5403	2756	1612	1571	1541	215.43	1163970	
Seed purchase	81600	60000	42000	42000	42000	0.54	43800	
Prescriptions and planning							39,000	
Recommended studies	Retubing Study $20k QCI						20000	2
Total backlog program							1,266,770	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

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TFL39 - Block 1 - Sunshine Coast District
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	50	10	20	20	0	75.00	3750	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	3	0	0	0	0	1,320.00	3960	1
Brushing	30	30	20	20	0	1,155.00	34650	1
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	83	40	40	40	0	510.35	42,360	
Seed purchase	3600	0	0	0	0	0.50	1800	1
Total legal obligations							44,160	
Backlog Reforestation								
Surveys	450	250	0	0	0	40.00	18000	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	10	10	0	0	10	1,320.00	13200	1
Brushing	40	20	0	0	0	1,155.00	46200	1
Totals hectares	500	280	0	0	10	154.80	77,400	
Seed purchase	12000	0	0	0	0	0.50	6,000	
Prescriptions and planning dollars							6,000	1
Total backlog reforestation							89,400	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	20	20	10	0	0	2,200.00	44000	1
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	20	20	10	0	0	2,199.78	44,000	
Seed purchase	6,000	0	0	0	0	0.50	3,000	
Prescriptions and planning dollars							5,000	1
Total site restoration							52,000	
Backlog Program Activities - Management Unit Total								
Surveys	500	260	20	20	0	43.50	21750	
Site preparation	20	20	10	0	0	2,199.78	44000	
Planting	13	10	0	0	10	1,319.80	17160	
Brushing	70	50	20	20	0	1,154.98	80850	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	603	340	50	40	10	271.57	163760	
Seed purchase	21600	0	0	0	0	0.50	10800	
Prescriptions and planning							11,000	
Recommended studies							0	
Total backlog program							185,560	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

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TFL39 - Blocks 2&5 - Campbell River District
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	26	26	26	26	26	32.73	851	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	26	0	26	0	0	1,146.12	29799	1
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	52	26	52	26	26	589.39	30,650	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							30,650	
Backlog Reforestation								
Surveys	200	150	100	100	100	33.00	6600	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	5	5	0	0	0	1,320.00	6600	1
Brushing	0	5	5	0	0	0.00	0	
Totals hectares	205	160	105	100	100	64.39	13,200	
Seed purchase	6000	6000	0	0	0	1.00	6,000	1
Prescriptions and planning dollars							1,500	1
Total backlog reforestation							20,700	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	20	20	20	20	20	1,155.00	23100	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	20	20	20	20	20	1,154.88	23,100	
Prescriptions and planning dollars							2,000	1
Total impeded areas							25,100	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	226	176	126	126	126	32.97	7451	
Site preparation	0	0	0	0	0	0.00	0	
Planting	5	5	0	0	0	1,319.21	6600	
Brushing	46	25	51	20	20	1,149.95	52899	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	277	206	177	146	146	241.69	66950	
Seed purchase	6000	6000	0	0	0	1.00	6000	
Prescriptions and planning							3,500	
Recommended studies							0	
Total backlog program							76,450	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

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TFL39 - Blocks 3&4 - Port McNeill District
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	13	0	0	0	0	96.92	1260	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	13	0	0	0	0	96.89	1,260	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							1,260	
Backlog Reforestation								
Surveys	1500	500	100	100	100	40.00	60000	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	5	5	0	0	0	1,320.00	6600	1
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	1505	505	100	100	100	44.25	66,600	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							3,000	1
Total backlog reforestation							69,600	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	10	10	10	10	10	1,155.00	11550	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	10	10	10	10	10	1,154.77	11,550	
Prescriptions and planning dollars							1,500	1
Total impeded areas							13,050	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	1513	500	100	100	100	40.49	61260	
Site preparation	0	0	0	0	0	0.00	0	
Planting	5	5	0	0	0	1,319.21	6600	
Brushing	10	10	10	10	10	1,154.77	11550	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1528	515	110	110	110	51.97	79410	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							4,500	
Recommended studies							0	
Total backlog program							83,910	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

TFL39 - Block 7 - Mid Coast District
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							0	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

TFL39 - Block 6 - Queen Charlottes District
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	100	100	50	50	50	33.00	3300	1
Site preparation	5	5	5	5	5	1,650.00	8250	1
Planting	20	20	0	0	0	2,000.00	40000	1
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	125	125	55	55	55	412.39	51,550	
Seed purchase	12000	12000	0	0	0	0.50	6000	1
Total legal obligations							57,550	
Backlog Reforestation								
Surveys	2300	1000	1000	1000	1000	33.00	75900	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	50	50	50	50	50	2,000.00	100000	1
Brushing	500	500	150	150	150	1,200.00	600000	1
Totals hectares	2850	1550	1200	1200	1200	272.25	775,900	
Seed purchase	30000	30000	30000	30000	30000	0.50	15,000	1
Prescriptions and planning dollars							20,000	1
Total backlog reforestation							810,900	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	20	20	20	20	20	1,320.00	26400	2
Totals hectares	20	20	20	20	20	1,319.87	26,400	
Seed purchase	12,000	12,000	12,000	12,000	12,000	0.50	6,000	2
Prescriptions and planning dollars								
Total site restoration							32,400	
Backlog Program Activities - Management Unit Total								
Surveys	2400	1100	1050	1050	1050	33.00	79200	
Site preparation	5	5	5	5	5	1,649.34	8250	
Planting	90	90	70	70	70	1,848.87	166400	
Brushing	500	500	150	150	150	1,200.00	600000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	2995	1695	1275	1275	1275	285.09	853850	
Seed purchase	54000	54000	42000	42000	42000	0.50	27000	
Prescriptions and planning							20,000	
Recommended studies	Retubing Study						20,000	2
Total backlog program							920,850	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

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TFL 39 - Weyerhaeuser Company Ltd.
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on Type 1, Type 2 silviculture strategy & Provincial Default Values

The following default provincial factors may be replaced by management unit specific factors.

The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

Tree Improve-ment	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.
Potential volume/ha gain (m3/ha/yr) provincial factors:

Tree Improve-ment	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
0.71	0	0	0	2.9	0.63	0	0	0.42	

Years the factor will affect:

Tree Improve-ment	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
0	65	65	65	65	65	65	65	65	

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.
Provincial factors for estimated value gain at harvest

Tree Improve-ment	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
						5-15%	15%	5%	

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.
Est. short term employment rate (person days/ha) provincial factors:

Tree Improve-ment	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
0.1	0.34	0.1	1.5	2	2.43	4.14	5.5	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys

Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improve-ment	Nursery Seedling Production	Silviculture Surveys
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	113		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	113		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			5,530
Total backlog surveys from the backlog table			4,639
33% of all silviculture surveys			3,356
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply		(A)	0
Surveyed area that will affect timber supply			
Replace with (A) if a more exact estimate is calculated			3,747
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR)			
Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			50
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas)			
Estimate area that will be classified as free growing after a survey in 2002/2003			410

Habitat Supply

Melp staff professional judgement used to estimate this performance measure	
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity	280

TFL 39 - Weyerhaeuser Company Ltd.
Performance Measures Based on Activities Planned for 2002/2003
Based on Type 1, Type 2 silviculture strategy & Provincial Default Values

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	113	0	3,747	25	113	626	465	110	2,250	8,244	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.42		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	21,597	16,683	7,556	0	61,425		107,261
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			50								50
1.5	Est. area that will be declared as free growing (ha)			410								410
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15%	5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	1.5	2	2.43	4.14	5.5	0.18	0.1	
3.2	Estimated total employment (person days/year)	11	0	375	38	226	1,521	1,925	605	405	824	
3.3	Estimated total full time equivalent positions (FTE)	0	0	2	0	1	8	11	3	2	5	33
4.1	**Forest Health Enhancement (ha)**											600
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											280
5.3	Est. area with secondary value provided to biodiversity (ha)											280

TFL 39 - Weyerhaeuser Company Ltd.
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	9,150	8,355	8,355	8,355	8,355	343	3,142,925
Planning, prescriptions and seedlings							179,500
Backlog Program Field Activities	5,403	2,756	1,612	1,571	1,541	215	1,163,970
Planning, prescriptions and seedlings							102,800
Totals	14,553	11,111	9,967	9,926	9,896		4,589,195

Performance Measures

Potential total merchentable volume increment in 65 years	107,261 m^3
Estimated ha that will be reclassified as stocked	50 ha
Estimated ha that will be declared as free growing	410 ha
Estimated total full time equivalent positions generated	33 FTEs
Forest health enhancement area	600 ha
Planned area for specific wildlife forage or habitat maintenance	280 ha
Estimated area with secondary value provided to biodiversity	280 ha

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** TFL 39 - Sunshine Coast Forest District

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

TFL 39 - Sunshine Coast Forest District
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	950	950	950	950	950	37.50	35625	1
Spacing	50	50	50	50	50	1980.00	99000	2
Pruning	20	20	20	20	20	2420.00	48400	3
Fertilizing	500	500	500	500	500	330.00	165000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	1520	1520	1520	1520	1520	228.96	348,025	
Planning and prescriptions							7,500	1
Total dollars							355,525	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	40	40	40	40	40	3,000.00	120000	1
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	40	40	40	40	40	2,999.93	120,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	950	950	950	950	950	37.50	35,625	
Spacing	50	50	50	50	50	1,979.96	99,000	
Pruning	20	20	20	20	20	2,419.88	48,400	
Fertilizing	500	500	500	500	500	330.00	165,000	
Other stand tending activities	40	40	40	40	40	2,999.70	120000	
Totals hectares	1560	1520	1520	1520	1520	300.01	468,025	
Planning and prescriptions							7,500	
Studies funding							0	
Total dollars							475,525	

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TFL 39 - Sunshine Coast Forest District
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	50	10	20	20	0	75.00	3750	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	3	0	0	0	0	1,320.00	3960	1
Brushing	30	30	20	20	0	1,155.00	34650	1
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	83	40	40	40	0	510.35	42,360	
Seed purchase	3600	0	0	0	0	0.50	1800	
Total legal obligations							44,160	
Backlog Reforestation								
Surveys	450	250	0	0	0	40.00	18000	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	10	10	0	0	10	1,320.00	13200	1
Brushing	40	20	0	0	0	1,155.00	46200	1
Totals hectares	500	280	0	0	10	154.80	77,400	
Seed purchase	12000	0	0	0	0	0.50	6,000	
Prescriptions and planning dollars							6,000	1
Total backlog reforestation							89,400	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	20	20	10	0	0	2,200.00	44000	1
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	20	20	10	0	0	2,199.78	44,000	
Seed purchase	6,000	0	0	0	0	0.50	3,000	
Prescriptions and planning dollars							5,000	1
Total site restoration							52,000	
Backlog Program Activities - Management Unit Total								
Surveys	500	260	20	20	0	43.50	21750	
Site preparation	20	20	10	0	0	2,199.78	44000	
Planting	13	10	0	0	10	1,319.80	17160	
Brushing	70	50	20	20	0	1,154.98	80850	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	603	340	50	40	10	271.57	163760	
Seed purchase	21600	0	0	0	0	0.50	10800	
Prescriptions and planning							11,000	
Recommended studies							0	
Total backlog program							185,560	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

1/4/2006

TFL 39 - Sunshine Coast Forest District
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on Type 1, Type 2 silviculture strategy & Provincial Default Values

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.71	0	0	0	2.9	0.63	0	0	0.42	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	
Provincial factors for estimated value gain at harvest							5-15%	15%	5%	
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	1.5	2	2.43	4.14	5.5	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	Nursery Seedling Production	Silviculture Surveys
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	13		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	13		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			950
Total backlog surveys from the backlog table.			500
33% of all silviculture surveys			479
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			50
Estimate area of free growing surveys			450
Estimate area of pre-stand tending surveys			370
Estimate of total surveys that will affect timber supply		(A)	870
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			870
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			0
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			410

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity. 40

TFL 39 - Sunshine Coast Forest District
Performance Measures Based on Activities Planned for 2002/2003
Based on Type 1, Type 2 silviculture strategy & Provincial Default Values

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	13	0	870	20	13	70	50	20	500	1,596	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.42		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	2,485	1,866	813	0	13,650		18,813
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			410								410
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	0.15	0.05		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	1.5	2	2.43	4.14	5.5	0.18	0.1	
3.2	Estimated total employment (person days/year)	1	0	87	30	26	170	207	110	90	160	
3.3	Estimated total full time equivalent positions (FTE)	0	0	0	0	0	1	1	1	1	1	5
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											40
5.3	Est. area with secondary value provided to biodiversity (ha)											40

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TFL 39 - Sunshine Coast Forest District
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	1,560	1,520	1,520	1,520	1,520	300	468,025
Planning, prescriptions and seedlings							7,500
Backlog Program Field Activities	603	340	50	40	10	272	163,760
Planning, prescriptions and seedlings							21,800
Totals	2,163	1,860	1,570	1,560	1,530		661,085

Performance Measures

Potential total merchentable volume increment in 65 years	18,813 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	410 ha
Estimated total full time equivalent positions generated	5 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	40 ha
Estimated area with secondary value provided to biodiversity	40 ha

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): TFL 39 Block 1

Stand Tending	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	300	950	216.7	1	1	33	37.5	13.6	Higher number of surveys estimated required to identify fertilization ground and PST surveys for recently declared FG appraisal blocks to identify area required for spacing. Higher cost estimates due to increased access costs (boat, helicopter).
Spacing	50	50	0.0	2	2	1980	1980	0.0	
Pruning	30	20	-33.3	2	3	2420	2420	0.0	Less areas for pruning identified during surveys in 2001. Reduction in area for pruning concurs with Type 2 Analysis.
Fertilizing	400	500	25.0	1	1	330	330	0.0	Increase in area available for fertilization identified during type 2 analysis.
Forest Health	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)**
Spacing	20	n/a	#######	2	0	1980	n/a	#VALUE!	Areas identified during surveys completed in 2000 and 2001 identified as low priority or no further treatments recommended
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Habitat Supply/ Biodiversity									
Riparian	40	40	0.0	1	1	3000	3000	0.0	
Non-Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): TFL 39 Block 1

Legal Obligation	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	0	50	#DIV/0!	0	1	33	75	127 3	Surveys required as a result of approved backlog SPs High cost due to small openings and helicopter access
Site preparation	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	3	#DIV/0!	0	1	1320	1320	0 0	Fill planting on areas under backlog SP
Brushing	30	30	0	1	1	1155	1155	0 0	
B/L Reforestation									
Surveys	450	450	0	1	1	33	40	21 2	Higher cost estimate due to helicopter and boat access
Site Prep	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	10	10	0	1	1	1320	1320	0 0	
Brushing	20	40	100	1	1	1155	1155	0 0	Additional brushing areas identified during surveys in 2000 and 2001
Impeded	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)**
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
Site Resoration									
Fill planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Rehab	0	20	#DIV/0!	0	1	2200	2200	0 0	Areas identified during 2000 and 2001 surveys Also see below
Reforestation	40	n/a	#VALUE!	1	0	1320	n/a	#VALUE!	Areas identified for treatment more appropriately described as rehabilitation treatments Less area identified

9.0 Evaluation Rating of TFL/TSA TFL 39 **Sustainable Harvest RMP**

Category	yes	partly	no	Rating (H, M, L)
Submitted by June 27 (TFL) or July 16 (TSA).	X			H
Basic data for TFL provided, area, current AAC, current harvest forecast, site/age class species profile. Long Run Sustainable Yield stated.			X	L
History of past treatments provided.			X	L
Text submitted identifying backlog and enhanced forestry program issues.	X			M
Opportunities to increase timber supply addressed in text, e.g. short/mid/long-term, timber flow benefits. Consistent with Type 1 or 2 Analysis.	X			M
Opportunities to increase timber value addressed in text, if none so stated. Consistent with Type 1 or 2 Analysis.	X			M
Opportunities to increase habitat supply/biodiversity addressed in text, if none so stated. Consistent with Type 1 or 2 Analysis.	X			M
Working targets proposed for volume/value/habitat.	X			M
Satisfactory treatment regime table provided.			X	L
Satisfactory rationale provided for the priority ranking of activities i.e. link to MP ,TSR, other . Consistent with Type 1 or 2 Analysis.	X			H
Where habitat supply/biodiversity activity indicated, rationale on why the silviculture treatment specifically maintains the non-timber values.			X	L
All summary tables submitted satisfactorily.	X			H
Projected job outcome of proposed program stated.	X			H
Opportunities to achieve FRBC performance goals Is program within reasonable range of last year's SH RMP projections for year 2002/03. Plan Comparison Table submitted with explanation for variations.	X			H
Performance measures,…where TFL used local factors supporting rationale provided.	X			H
SH study form completed satisfactorily	X			H
Communication log documents partnership group and stakeholder discussions and issues.			X	L
Other (describe)				
Overall rating	n/a	n/a	n/a	L

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** South Island District SUM TSA & TFLs

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

South Island District SUM TSA & TFLs
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	9975	10150	9100	9000	9500	32.47	323925	
Spacing	445	495	395	355	380	1811.22	806000	
Pruning	150	75	120	157	100	2133.28	320000	
Fertilizing	3680	2700	3150	2500	2700	335.03	1232900	
Other	0	50	50	50	50	0.00	0	
Totals hectares	14250	13470	12815	12062	12730	188.27	2,682,825	
Planning and prescriptions							100,875	
Total dollars							2,783,700	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	70	70	70	70	70	1,357.07	95000	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	70	70	70	70	70	1,356.83	95,000	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	150	150	175	175	175	2,999.92	450000	
Non-riparian treatments	100	200	350	350	350	2,999.88	300000	
Totals hectares	250	350	525	525	525	2,999.90	750,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	9975	10150	9100	9000	9500	32.47	323,925
Spacing	445	495	395	355	380	1,811.20	806,000
Pruning	220	145	190	227	170	1,886.30	415,000
Fertilizing	3680	2,700	3,150	2,500	2,700	335.03	1,232,900
Other stand tending activities	250	400	575	575	575	2,999.75	750000
Totals hectares	14570	13490	12835	12082	12750	242.13	3,527,825
Planning and prescriptions							100,875
Studies funding							26000
Total dollars							3,654,700

2002-2007 Resource Management Plan for Arrowsmith TSA (38)
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1750	1750	1200	1200	1200	30.00	52500	2
Spacing	300	300	200	200	200	1800.00	540000	1
Pruning	50	50	50	50	50	1600.00	80000	3
Fertilizing	1000	500	500	400	400	275.00	275000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	3100	2600	1950	1850	1850	305.65	947,500	
Planning and prescriptions							0	
Total dollars							947,500	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	20	20	20	20	20	1,000.00	20000	1
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	20	20	20	20	20	999.90	20,000	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	1750	1750	1200	1200	1200	30.00	52,500
Spacing	300	300	200	200	200	1,799.99	540,000
Pruning	70	70	70	70	70	1,428.57	100,000
Fertilizing	1000	500	500	400	400	275.00	275,000
Other stand tending activities	0	0	0	0	0	0.00	0
Totals hectares	3120	2620	1970	1870	1870	310.10	967,500
Planning and prescriptions							0
Studies funding							0
Total dollars							967,500

Naka Tree Farm Licence 25 Block 1
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	625	550	50	50	50	33.00	20625	1
Spacing	25	25	25	25	50	2000.00	50000	1
Pruning	100	25	25	25	50	2400.00	240000	1
Fertilizing	500	0	500	0	300	415.00	207500	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	1250	600	600	100	450	414.50	518,125	
Planning and prescriptions							48,875	1
Total dollars							567,000	
Forest Health Enhancement								
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	625	550	50	50	50	33.00	20,625	
Spacing	25	25	25	25	50	1,999.92	50,000	
Pruning	100	25	25	25	50	2,399.98	240,000	
Fertilizing	500	0	500	0	300	415.00	207,500	
Other stand tending activities	0	0	0	0	0	0.00	0	
Totals hectares	1250	600	600	100	450	414.50	518,125	
Planning and prescriptions							48,875	
Studies funding							20000	1
Total dollars							587,000	

TFL 44 - ALBERNI
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	6000	6250	6500	6500	7000	33.00	198,000	1
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	35	0	0.00	0	
Fertilizing	1000	1200	1200	1200	1200	330.00	330,000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	7000	7450	7700	7735	8200	75.43	528,000	
Planning and prescriptions							20,000	1
Total dollars							548,000	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	50	50	50	50	50	1,500.00	75,000	1
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	50	50	50	50	50	1,499.94	75,000	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	100	100	125	125	125	3,000.00	300,000	1
Non-riparian treatments	50	150	300	300	300	3,000.00	150,000	1
Totals hectares	150	250	425	425	425	3,000.00	450,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	6000	6250	6500	6500	7000	33.00	198,000	
Spacing	0	0	0	0	0	0.00	0	
Pruning	50	50	50	85	50	1,499.97	75,000	
Fertilizing	1000	1,200	1,200	1,200	1,200	330.00	330,000	
Other stand tending activities	150	250	425	425	425	2,999.94	450000	
Totals hectares	7200	7500	7750	7785	8250	146.25	1,053,000	
Planning and prescriptions							20,000	
Studies funding								
Total dollars							1,073,000	

TFL 54 Interfor West Coast Escalante/Clayoquot/Kennedy
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities

Stand Tending

	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	#DIV/0!	0	1
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Fertilizing	380	200	200	200	200	330.00	125400	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	380	200	200	200	200	330.00	125,400	
Planning and prescriptions							0	
Total dollars							125,400	

Forest Health Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Domestic Range

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	#DIV/0!	0	
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Fertilizing	380	200	200	200	200	330.00	125,400	
Other stand tending activities	0	0	0	0	0	0.00	0	
Totals hectares	380	200	200	200	200	329.99	125,400	
Planning and prescriptions						$35	0	
Studies funding							0	
Total dollars							125,400	

TFL 57
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Stand Tending								
Surveys	600	600	600	500	500	33.00	19,800	1
Spacing	0	50	50	50	50	0.00	0	
Pruning	0	0	45	47	0	0.00	0	
Fertilizing	300	300	250	200	100	400.00	120,000	1
Other	0	50	50	50	50	0.00	0	
Totals hectares	900	1000	995	847	700	155.33	139,800	
Planning and prescriptions							7,000	1
Total dollars							146,800	
Forest Health Enhancement								
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	50	50	50	50	50	3,000.00	150,000	1
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	50	50	50	50	50	2,999.94	150,000	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	600	600	600	500	500	33.00	19,800	
Spacing	0	50	50	50	50	0.00	0	
Pruning	0	0	45	47	0	0.00	0	
Fertilizing	300	300	250	200	100	400.00	120,000	
Other stand tending activities	50	100	100	100	100	2,999.76	150000	
Totals hectares	950	950	945	797	650	305.05	289,800	
Planning and prescriptions							7,000	
Studies funding							0	
Total dollars							296,800	

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Tree Farm Licence No. 46
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1000	1000	750	750	750	33.00	33000	1
Spacing	120	120	120	80	80	1800.00	216000	2
Pruning	0	0	0	0	0	0.00	0	
Fertilizing	500	500	500	500	500	350.00	175000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	1620	1620	1370	1330	1330	261.73	424,000	
Planning and prescriptions							25,000	1
Total dollars							449,000	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	50	50	50	50	50	3,000.00	150000	1
Totals hectares	50	50	50	50	50	2,999.94	150,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	1000	1000	750	750	750	33.00	33,000	
Spacing	120	120	120	80	80	1,799.99	216,000	
Pruning	0	0	0	0	0	0.00	0	
Fertilizing	500	500	500	500	500	350.00	175,000	
Other stand tending activities	50	50	50	50	50	2,999.76	150000	
Totals hectares	1670	1620	1370	1330	1330	343.71	574,000	
Planning and prescriptions							25,000	
Studies funding							6000	2
Total dollars							605,000	

1/4/2006

South Island District SUM TSA & TFLs
Backlog Program Table
For the 2002/03 Fiscal Year

Activities

Legal Obligations

Activities	Treatment Area Goals (ha) 2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	Plan 2002/03 Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	

Backlog Reforestation

Activities	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	5000	5250	3500	2000	2000	30.40	152000	
Site preparation	0	0	0	0	0	0.00	0	
Planting	10	5	0	0	0	1,449.28	14500	
Brushing	700	450	200	125	100	1,154.99	808500	
Totals hectares	5710	5705	3700	2125	2100	170.75	975,000	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							40,000	
Total backlog reforestation							1,015,000	

Impeded areas

Activities	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	4175	889	425	325	175	37.02	154575	
Brushing	1065	915	615	265	165	1,074.41	1144250	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	5240	1804	1040	590	340	247.87	1,298,825	
Prescriptions and planning dollars							52,200	
Total impeded areas							1,351,025	

Site Restoration

Activities	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	Unit Cost ($/ha)	Funding ($)	Priority
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	40	40	40	40	40	1,399.83	56000	
Reforestation	5	5	5	5	5	1,318.68	6600	
Totals hectares	45	45	45	45	45	1,390.62	62,600	
Seed purchase	5,000	5,000	5,000	5,000	5,000	0.67	3,350	
Prescriptions and planning dollars							0	
Total site restoration							65,950	

Backlog Program Activities - Management Unit Total

Activities	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	9175	6139	3925	2325	2175	33.41	306575	
Site preparation	40	40	40	40	40	1,399.41	56000	
Planting	15	10	5	5	5	1,404.61	21100	
Brushing	1765	1365	815	390	265	1,106.37	1952750	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	10995	7554	4785	2760	2485	212.50	2336425	
Seed purchase	5000	5000	5000	5000	5000	0.67	3350	
Prescriptions and planning							92,200	
Recommended studies							0	
Total backlog program							2,431,975	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

2002-2007 Resource Management Plan for Arrowsmith TSA (38)
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	

Backlog Reforestation

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1000	3000	2000	1000	1000	20.00	20000	2
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	1000	3000	2000	1000	1000	20.00	20,000	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							20,000	

Impeded areas

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	700	500	200	100	100	35.00	24500	2
Brushing	700	700	500	200	100	1,000.00	700000	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1400	1200	700	300	200	517.50	724,500	
Prescriptions and planning dollars							0	
Total impeded areas							724,500	

Site Restoration

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	

Backlog Program Activities - Management Unit Total

Activities	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1700	3500	2200	1100	1100	26.18	44500	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	700	700	500	200	100	1,000.00	700000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	2400	4200	2700	1300	1200	310.21	744500	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							744,500	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

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Naka Tree Farm Licence 25 Block 1
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							0	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

TFL 44 - ALBERNI
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	2000	1500	1000	500	500	33.00	66,000	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	400	300	150	75	50	1,155.00	462,000	1
Totals hectares	2400	1800	1150	575	550	220.00	528,000	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							20,000	1
Total backlog reforestation							548,000	
Impeded areas								
Surveys	1100	0	0	0	0	33.00	36,300	2
Brushing	50	50	0	0	0	1,155.00	57,750	2
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1150	50	0	0	0	81.78	94,050	
Prescriptions and planning dollars							2,000	2
Total impeded areas							96,050	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	3100	1500	1000	500	500	33.00	102300	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	450	350	150	75	50	1,155.00	519750	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	3550	1850	1150	575	550	175.22	622050	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							22,000	
Recommended studies								
Total backlog program							644,050	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

TFL 54 Interfor West Coast Escalante/Clayoquot/Kennedy
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	#DIV/0!	0	0
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	#DIV/0!	0	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	10	5	0	0	0	1,450.00	14500	1
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	10	5	0	0	0	1,449.71	14,500	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							14,500	
Impeded areas								
Surveys	2200	239	200	200	50	40.00	88000	1
Brushing	200	100	100	50	50	1,250.00	250000	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	2400	339	300	250	100	140.83	338,000	
Prescriptions and planning dollars							46,200	
Total impeded areas							384,200	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	2200	239	200	200	50	40.00	88000	
Site preparation	0	0	0	0	0	0.00	0	
Planting	10	5	0	0	0	1,449.57	14500	
Brushing	200	100	100	50	50	1,249.99	250000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	2410	344	300	250	100	146.26	352500	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							46,200	
Recommended studies							0	
Total backlog program							398,700	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

TFL 57
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	2000	750	500	500	500	33.00	66,000	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	300	150	50	50	50	1,155.00	346,500	1
Totals hectares	2300	900	550	550	550	179.35	412,500	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							20,000	1
Total backlog reforestation							432,500	
Impeded areas								
Surveys	100	100	0	0	0	33.00	3,300	2
Brushing	100	50	0	0	0	1,155.00	115,500	2
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	200	150	0	0	0	594.00	118,800	
Prescriptions and planning dollars							4,000	2
Total impeded areas							122,800	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	2100	850	500	500	500	33.00	69300	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	400	200	50	50	50	1,155.00	462000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	2500	1050	550	550	550	212.52	531300	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							24,000	
Recommended studies							0	
Total backlog program							555,300	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Tree Farm Licence No. 46
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	0.00	0	
Site Preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	
Impeded areas								
Surveys	75	50	25	25	25	33.00	2475	2
Brushing	15	15	15	15	15	1,400.00	21000	2
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	90	65	40	40	40	260.83	23,475	
Prescriptions and planning dollars							0	
Total impeded areas							23,475	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	40	40	40	40	40	1,400.00	56000	1
Reforestation	5	5	5	5	5	1,320.00	6600	2
Totals hectares	45	45	45	45	45	1,391.08	62,600	
Seed purchase	5,000	5000	5000	5000	5000	0.67	3,350	2
Prescriptions and planning dollars							0	
Total site restoration							65,950	
Backlog Program Activities - Management Unit Total								
Surveys	75	50	25	25	25	33.00	2475	
Site preparation	40	40	40	40	40	1,399.93	56000	
Planting	5	5	5	5	5	1,319.21	6600	
Brushing	15	15	15	15	15	1,399.81	21000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	135	110	85	85	85	637.54	86075	
Seed purchase	5000	5000	5000	5000	5000	0.67	3350	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							69,425	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

South Island District SUM TSA & TFLs
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.
Potential volume/ha gain (m3/ha/yr) provincial factors:

0.77	0	0	0	2.9	0.41	0.25	0	0.46

Years the factor will affect:

0	65	65	65	65	65	65	65	65

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

Provincial factors for estimated value gain at harvest	5-15%	15-30%	1-5%

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.
Est. short term employment rate (person days/ha) provincial factors:

0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys.
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys.

	Area		
	Tree Improvement	Nursery Seedling Production	Silviculture Surveys
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	15		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	15		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			9,975
Total backlog surveys from the backlog table			9,175
33% of all silviculture surveys			6,320
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply		(A)	0
Surveyed area that will affect timber supply			
Replace with (A) if a more exact estimate is calculated			6,320

Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR)
Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003

Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas)
Estimate area that will be classified as free growing after a survey in 2002/2003

Habitat Supply
Meip staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity.

South Island District SUM TSA & TFLs
Performance Measures Based on Activities Planned for 2002/2003
Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	15	0	6,320	40	15	1,765	445	220	3,680	12,750	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	2,871	47,038	7,232	0	110,400		167,540
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	2	0	632	38	30	4,607	1,762	999	662	1,275	
3.3	Estimated total full time equivalent positions (FTE)	0	0	4	0	0	26	10	6	4	7	56
4.1	**Forest Health Enhancement (ha)**											70
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											250
5.3	Est. area with secondary value provided to biodiversity (ha)											0

South Island District SUM TSA & TFLs
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	14,570	13,490	12,835	12,082	12,750	242	3,527,825
Planning, prescriptions and seedlings							126,875
Backlog Program Field Activities	10,995	7,554	4,785	2,760	2,485	212	2,336,425
Planning, prescriptions and seedlings							95,550
Totals	25,565	21,044	17,620	14,842	15,235		6,086,675

Performance Measures

Potential total merchentable volume increment in 65 years	167,540 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	56 FTEs
Forest health enhancement area	70 ha
Planned area for specific wildlife forage or habitat maintenance	250 ha
Estimated area with secondary value provided to biodiversity	0 ha

ARROWSMITH TIMBER SUPPLY AREA
South Island Forest District

RESOURCE MANAGEMENT PLAN
For the period 2002-2007

SUSTAINABLE HARVEST COMPONENT

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Arrowsmith Timber Supply Area
2002-2007 Resource Management Plan
Sustainable Harvest Component

Article 1 Introduction

This document was prepared in response to the FRBC requirement for resource management planning. The information that follows gives a background to the Arrowsmith TSA, an outline of the timber supply issues, an incremental silviculture history and a link to the timber supply review process. The latter part of this document outlines opportunities to increase timber supply and timber quality, provides working targets and supports these opportunities and targets with a proposed 5 year incremental silviculture program.

Important Note:

It must be noted that we have attempted to incorporate some of the regimes that are suggested in the TYPE 2 Silviculture Analysis completed for the TSA. Unfortunately due to the timing of the report the district has not been able too fully interpret the results. We will over the next year adjust district silviculture regimes after considering the information in the Type 2. So other than a reduced amount of spacing and pruning this RMP is still based on the Type 1 Silviculture analysis.

Article 2 Basic Data

Section 2.01 Administrative Information

The Arrowsmith TSA is located on the southern half of Vancouver Island within the Vancouver Forest Region. Many of the communities within the district are heavily dependent on the forest industry. The TSA consists of the Small Business Forest Enterprise Program (SBFEP) charted areas and Forest Licences.

Section 2.02 Land Area

Table 2.02 Land Area

Description	**Area(ha)**	**Area %**
Total Area of TSA	168,800	100
Total Productive Forest	124,600	74
Net Timber Harv. Land Base	68,672	41

Section 2.03 Annual Allowable Cut (AAC) and Harvest Forecast

Table 2.03 Annual Allowable Cut

AAC Type	Pre-TSR	TSR 1	Change (%)
Conventional			
- Main TSA		380,000	
- Clayoquot		13,700	
Sound Sub-Total	464,630	393,700	- 15.3
Deciduous	3870	6300	+62.8
Insect Disease			
Marginal			
Total	**468,500**	**400,000**	**-14.6**
Woodlot AAC		13,750	

The initial harvest level (IHL) of 468,500 m3 was maintained for only one decade. After this, declines averaging 12%/decade are expected until a midterm harvest level of 277,000 m3 (42% below IHL, 30% below TSR 1 AAC) is reached 50 years from now. This downturn will continue until 140 years from now, when the harvest rate will increases by 10%/decade to reach a long-term harvest level (LTHL) of 377,000m3 (30% below IHL, 14% below TSR 1 AAC).

Section 2.04 Site Class, Age Class and Tree Species Profile

Table 2.04a Site Class

Site Class	%
Poor	48
Medium	29
Good	23

In general, eastern portions of the TSA are dominated by younger, predominantly good and medium site Douglas-Fir stands. Western portions contain predominantly older, poor site, western red cedar and western hemlock stands. Table 2.04b shows age class distribution by percentage.

Table 2.04b Age Class Distribution

Age Class	**%**
NSR	0
0	8
1-20	9
21-40	12
41-60	9
61-80	17
81-100	5
101-120	1
121-140	1
141-250	12
251+	26

Table 2.04c Tree Species Profile

Species	**%**
Hemlock	28
Redcedar	29
Douglas-fir	37

Article 3 Timber Supply Issues

Section 3.01 Quantity

As previously mentioned the current AAC of 400,000 m3 is predicted to fall by 30% to 277,000 m3 in 50 years. A number of issues will affect the AAC over the next few decades including more demand for parks and reserve areas as well as:

(i) Forest Policy

- ✓ Forest Practices Code restricts harvest by introducing green up, adjacency and forest cover constraints.
- ✓ The Clayoquot Sound Land Use Decision is ecosystem based forestry that allows only 1% of pristine watersheds to be harvested over a 10-year period.
- ✓ The Vancouver Island Land Use Plan (VILUP) introduces the concept of Low Intensity Areas (LIA) to the planning process as well as more intensive timber production zones.

(ii) Biodiversity and Habitat Supply

- ✓ Future policies that affect timber harvesting include: Old Growth Management Areas (OGMA) and Landscape Unit Planning. Planning requirements like Forest Ecosystem Networks (FEN) will be an integral part of the Forest Development Plan process.
- ✓ Alternate or restrictive harvest policies to preserve wildlife habitat including but not limited to Marbled Murlets and the Northern Goose Hawk.
- ✓ The current trend is to use alternate silvicultural systems on the majority of timber sales.

(iii) Forest Health

- ✓ Root disease results in significant losses to Douglas-Fir Stands. Douglas fir makes up about 37% of the TSA and yields have been reduced by an average of 12% (using the WINTIPSY Operational Adjustment Factor 2).

Section 3.02 Quality

As the conversion to second growth harvesting takes place, timber quality will decline. Premium log content is expected to decline to slightly more than half of todays levels within 50 years.

Section 3.03 The Role of Incremental Silviculture

Incremental silviculture is a general strategy to mitigate constraining factors on timber supply within the Arrowsmith TSA. Currently, spacing of stands over 1600 sph, backlog brushing, and fertilization of poor and medium site index, commercially thinned Douglas-fir stands, are all part of the timber supply review process.

Juvenile spacing increases sawlog diameters, therefore making stands reach a merchantable size at an earlier age. It also makes the use of commercial thinning and alternate silvicultural systems a possibility. Commercial thinning, alternate silvicultural systems and the use of Wildlife Tree Patches (WTP's) will be a necessary part of harvesting, as the move to certification takes place.

Pruning is essential to maintaining a premium log content within the timber profile. Pruning will become increasingly critical as the conversion to second growth and smaller diameter sawlogs takes place.

Article 4 Incremental Silviculture History

Section 4.01 Incremental Treatments in the Arrowsmith TSA

Juvenile spacing and fertilization began, on a large scale, in the 1980's under FRDA (Forest Resource Development Agreement). It continued into the early 1990's under FRDA II, when the program began to include pruning. Many stands treated 15-20 years ago have been (or are planned for) commercial thinning under the SBFEP program. Without these treatments, commercial thinning would not be possible.

In 1995, FRBC picked up where FRDA left off. As opportunities to space and prune East Coast Douglas Fir stands were used up, the FRBC funded program switched to spacing and pruning on high density western hemlock stands. In 1997 the Ministry Outstanding and Backlog Reforestation Programs where picked up by FRBC. A down turn in FRBC revenues required a reduction in budgets which has resulted in a reduction of incremental treatments from 1109 ha in 1995 to 52 ha in 1999 well below historical levels for the TSA. See figure 4.01.

Table 4.01 FRDA II and FRBC Funded Silviculture Activities, Arrowsmith TSA, 1990-1999.

Year	JS (ha)	Incremental Pruning (ha)	Total Incremental	Backlog Brushing
1990	326	33	359	
1991	315	67	382	
1992	635	42	677	
1993	452	130	567	
1994	276	355	631	
1995	523	586	1109	
1996	132	286	418	
1997	518	197	715	83
1998	350	226	576	215
1999	43	9	52	377

Section 4.02 Link To AAC and TSR II

Only juvenile spacing has been modelled in to AAC calculations for TSR 2. The basic assumption is that all stands over 1600 stems per hectare will be controlled for density. The five-year silviculture plan for Arrowsmith TSA assumes that greater than half of all reforested openings will exceed this density. In addition, large areas of the Forest Licence on the West Coast still require juvenile spacing. Poorer west coast hemlock and cedar sites, that have not yet achieved the target 5m height criteria will require spacing in order to achieve minimum merchantable piece size in 100-120 years. The RMP target of 300 ha/yr. allows for completion of backlog spacing and for new areas with higher densities that will soon come on line.

Fertilization has not been included in TSR II because of insufficient modelling. Fertilization will have positive short term and medium term impacts on stands to be harvested.

Article 5 Opportunities to Increase Timber Supply

Section 5.01 Opportunities through TSR Sensitivity Analyses

Backlog and incremental treatments have the potential to increase timber supply in the Arrowsmith TSA by:

(i) ***Reducing green- up ages.*** Backlog brushing reduces the time to green up by increasing height growth on regenerating stands. Reducing green up shows substantial effects, particularly in the short term. Please note reducing green up also includes planting improved stock and fertilizing at the time of planting, both of which are currently considered basic obligations and not eligible for FRBC funding.

(ii) ***Creating opportunities to raise mid term harvests through commercial thinning and fertilization.*** Note that commercial thinning is made possible through juvenile spacing treatments. Fertilization, it is assumed, is generally applied to commercially thinned stands at least 10 years before harvest. Both practices could increase existing unmanaged stand yields by 10%.

(iii) ***Increasing Regenerated Stand Yields***. Both backlog brushing and fertilization will have an effect over the mid and long term. Timber Supply Review sensitivity analysis shows a 10% increase over the base case harvest forecast.

Article 6 Strategies to Increase the Quantity of Future Timber Supply

Section 6.01 Short Term

- ✓ Complete brushing of all backlog impeded stands in 3 years. Complete second treatments over the next two years, where necessary. The target of this program is to achieve full green and Free to Grow status of coniferous stands and to improve growth and yield where it is currently hindered by competing brush.
- ✓ Fertilize 1000+ ha/yr of second growth Douglas Fir stands within 10 years of harvest. This number is reduced to Approximately 400 hectares a year over the long term. The 1000 hectares will only be required for the first 2-3 years to catch up on a backlog of areas requiring fertilization.

Section 6.02 Mid Term

- ✓ Continue and complete backlog brushing to reduce green up ages.
- ✓ Juvenile space 300 ha/yr. to allow commercial thinning of both Douglas fir and western hemlock stands. This will also allow harvesting, where not usually possible, in visual quality zones.
- ✓ Fertilize commercially thinned stands to increase final harvest yields.

Section 6.03 Long Term

- ✓ Increase regenerated stand yields through fertilization as mentioned above.
- ✓ Reduce green up time frames as mentioned above.
- ✓ Juvenile space to allow for use of alternate silvicultural systems in overcoming adjacency constraints.

Article 7 Strategies to Increase the Quality of Future Timber Supply

Section 7.01 Product Objectives

The following are definitions of premium logs and sawlogs in the Arrowsmith TSA.
Premium Log: 45 + cm dbh for pruned Douglas fir and 200+ yrs for unpruned Douglas fir.
Sawlog: In the former Duncan district portion of the TSA: age at which stand reaches 30m height. In the former Port Alberni district: East Zone- minimum dbh of 25 cm and min vol/ha of 300 m3; West Zone- 400 m3/ha; cable/heli zone-600 m3/ha. Ages range from 45 years on good sites to 165 years on poor sites.

Section 7.02 Potential Treatments/Strategy

- ✓ Prune all spaced stands. East Zone: Douglas fir 2 lifts (5.5m). West Zone: hemlock/cedar one lift (3.0m).
- ✓ Target pruning treatments early (if possible, concurrent with JS) to achieve a 10 cm knotty core.
- ✓ Fertilize after crown closure to speed the occlusion of knots an increase diameter growth.

Section 7.03 Premium Log Forecast

The proposed strategy is anticipated to have mid and long term effects. In the short term, harvests will largely come from very old stands in the west zone and will not be affected by the pruning strategy. This harvest profile will yield a premium log forecast of about 15%. The mid-term forecast is anticipated to yield a premium log profile of 8% and the long term forecast is expected to yield a profile of 9%.

Note that to achieve a higher premium log forecast, more pruning would have to be accomplished. Pruning on lower site indexes is not considered to yield a good return on investment, therefore only a longer rotation strategy could maintain the current profile of 15%.

Article 8 Habitat Supply

Section 8.01 ***Issues***

A history of progressive clearcuts and silviculture practices that manage primarily for timber values, has contributed to a decreased amount of stand and landscape level biodiversity on the Arrowsmith TSA. Pre-Forest Practices Code harvesting also included cutting up to the banks of all streams.

Although future harvest planning will include practices such as riparian reserve zones, forest ecosystem networks (FEN's) and landscape unit planning, a deficit of habitat supply will still pose problems.

Section 8.02 Objectives/Treatments- Stand Level Biodiversity

Currently there are no habitat treatments such as riparian spacing planned for the TSA. Several objectives outlined in the Ministry of Environment *Habitat/Ecosystem Objectives and Monitoring Procedures for Incremental and Backlog Silviculture Treatments,* have been incorporated into the Sustainable Harvest program. Table 8.02b outlines objectives, practices and applicable silviculture treatments that contribute to stand level biodiversity.

Table 8.02b Objectives and Practices for Maintaining Stand Level Biodiversity

Objective	Practice	Treatment: JS/PR/BR*
Manage for stand vertical and horizontal structure.	Allow for shade tolerant understory trees when spacing (i.e. Cw).	JS
Rehabilitate Riparian Management Areas	Include RMZ's and RRZ's in manual brushing treatments to encourage long term conifer establishment. Space RMZ's and RRZ's to a lower density to encourage low density, large diameter conifer establishment.	BR JS
Maintain visual screening corridors or buffers for wildlife.	Maintain a 1 or 2 tree no-pruning buffer along roads. Do not prune WTP's.	PR
Retain wildlife trees and tree patches.	Plan for a percentage of area as WTP's in spacing layout. WTP's should include both high and low density stands. Do not prune WTP's.	JS PR
Retain "rare" ecosystems, forest, plant and vegetation types.	Reserve cascara, dogwood, pacific crab apple, yew and other rare species from cutting when brushing or spacing.	JS BR

JS-Juvenile Spacing
PR-Pruning
BR-Brushing

Section 8.03 Objectives/Treatments-Landscape Level Biodiversity

In advance of landscape unit planning, South Island Forest District has a district policy on Wildlife Tree Patches. The idea is to maintain a percentage of each landscape unit as old growth forest or second growth forest with old growth characteristics. Therefore, wildlife tree patches will be retained when spacing and pruning. The district policy will be used as a guideline to determine the percentage of area to be retained as WTP's. This will ensure we are managing for WTP's in future harvest planning. Table 8.03a identifies landscape units where silviculture treatments are likely to happen and the applicable WTP retention percentage.

Table 8.03a WTP Retention Guidelines

Landscape Unit	**WTP Retention (by biogeoclimatic zone)**
Effingham	CWH 6% MH 4%
Escalante	CWH 13% MH 10%
Maggie	CWH 13%
Nanaimo	CDF 12% CWH 17% MH 3%
Nanoose	CDF 12% CWH 13%
Qualicum	CDF 15% CWH 14%
Rosewall	CDF 13% CWH 15%
Toquart	CWH 7% MH 3%

In addition to the use of WTP's, it is expected that manual brushing and juvenile spacing RMZ's/RRZ's will contribute to the long-term establishment of Forest Ecosystem Networks. Although RRZ's will not contribute to the next AAC forecast, brushing and spacing will help to create the large diameter conifers necessary for re-establishing riparian habitat.

Article 9 Working Targets

TSR analysis indicates the following working targets may be attainable. Proposed silvicultural treatment regimes are important for meeting these targets.

Section 9.01 Quantity

- ✓ Maintain the current harvest level of 400,000 m3 in the short and mid terms, rising in 15 decades to a long-term harvest level of 435,000 m3.

Section 9.02 Quality

- ✓ Maintain the proportion of premium logs at or above 8% of future harvest volumes.

Section 9.03 Habitat Supply/Biodiversity

- ✓ Maintain the specified percentages of land area as Wildlife Tree Patches as per District Policy.
- ✓ Restore the majority of riparian management zones to free growing coniferous or mixed coniferous/deciduous stands on all pre-1987 harvested areas.
- ✓ WTP's and restored RMZ's to be available for harvest planning in 80 + years or by the commencement of second harvest.

Article 10 Proposed Program

The backlog brushing and juvenile spacing components are necessary to achieve the assumptions regarding incremental and basic silviculture in the current AAC determination.

Backlog brushing, juvenile spacing, pruning and fertilization will help to mitigate an AAC falldown in the Small Business Program. They are also an integral part of achieving the working targets as set out in this RMP.

The focus of this program will be to complete the majority of backlog brushing within 3 years, start on a regular juvenile spacing/pruning program and to fertilize 400 ha/yr over the long term. In the short term we feel upwards of 1000 hectares per year could be fertilized in order to catch up with a backlog.

The proposed program is anticipated to provide 4400 person days of employment or 20 full time equivalent positions. There is also a long-term impact of 53,500m3 in wood volume, which will provide additional employment through the Small Business Forest Enterprise Program.

Article 11 Performance Measures

Regional productivity averages were used for fertilisation. Productivity figures for pruning, surveys, juvenile spacing and brushing come from 1998 and 1999 contracts on the TSA. Easier ground on the East Coast areas increases the average productivity for the whole TSA. We have attempted to compensate for this.

Article 12 Licensee Partnerships

A meeting was conducted with representatives from Interfor in the spring of 2000. Interfor has included TSA funding in their online plan and taken on the implementation of a survey/brushing program on Forest Licence A19235 as well as some reverted TL's in the Stewardson area of the TSA. They are running this program concurrent with surveys and brushing on TFL 54. Interfor has a camp that allows access to most of FLA19235 and TFL 54. Since the majority of backlog brushing remains in this remote West Coast location, Ministry of Forests benefits greatly from working in partnership with Interfor.

In addition, Weyerhaeuser has also included TSA funding in their online plan. Weyerhaeuser is currently using the services of Renewal Investment Corporation (RIC) to implement their FRBC funded SH program. RIC has been responsible for implementing a free growing surveys program and a brushing program on the remainder of the TSA.

Ongoing communications with Interfor and Weyerhaeuser (RIC) by phone, e-mail and occasional meetings are part of creating a streamlined process to survey and declare backlog openings free growing. This process also applies to the development and approval of brushing treatment prescriptions as well as the implementation of a brushing program. Both partnerships have been essential to completing the FRBC funded SH program in South Island Forest District.

REFERENCES

1. *Arrowsmith Timber Supply Area. Incremental Silviculture Strategy (Interim).* Version 1.0. British Columbia Ministry of Forests. August 31, 1998.
2. *District Wildlife Tree Patch Policy (DSI-01).* December 8, 1997.
3. *Habitat Objectives and Monitoring Procedures for Incremental Silviculture.* Ministry Of Environment Lands and Parks. June 1998.

Appendix 1 Silviculture History for the Arrowsmith TSA

YEAR	SU	SP	PL	BR	JS	PR	FE GR	FE HELI
1999	5484.4	258.3	1306.3	560.7	43.2	76.2	75.5	
1998	3548.2	329.4	3124.8	1364.8	349.8	379.6	438.4	
1997	2799.2	561.5	4714.4	742.7	517.5	300.3	1066.8	
1996	2473.9	441.6	6218.4	1044.2	132.7	378.8	1443.9	109
1995	2241.5	1588.5	5694.6	635.9	522.8	606.2	2.2	447.8
1994	1781.1	1926.6	5315.5	592.8	275.9	437.3	34.9	160.2
1993	242.5	983.3	3173.6	486.5	452.1	145.5	2.2	353
1992	323.3	449.8	4257	598.9	635.3	42	4.7	619
1991	38	1031.2	4508.8	512	315	67		856
1990	174	956.8	3225.6	553	326.6	33		1084
1989	19	807.8	2653.8	1112.5	418.6	325		279
1988	23	1046.9	1386.5	548	637	132		2113
1987		477.4	1484	594	553	104		588
1986		826	660	986.5	336	9		856
1985		510	869	743.5	224	12		
1984		633	703	1143.5	632	167		
1983		256	1112.5	1015	423.3	203		
1982		494	1172	528.5	1078			
1981		341	1242	353	1134			2300
1980		558	522	121	1508.7			2739.7
1979		910	461	70	1545	5		585
1978		341	721	12	712			563
1977		514	287		137			
1976		251	312					
1975		15	635					
1974		678	163					
1973		68	148					
1972		134	272					
1971		337	520		32			
1970		415	531					
1969		73	0					
1968		173	77					
1967		411	379					
1966		429	23					
1965		554	229					
1964		41	154					
1963		227	143					
1962		298	139					
1961		335	0					
1960		29	0					

1959		22	0					
1958		66						
1957			12					
1956		22						
1955								
1954		17						
1953								
1952								
1951		31						
1950			286					
1949			341					
1948			1323					
1947			562					
1946			301					
1945		655	205					
1944		36	271					
1943			246					
1942		519	579					
1941		443	972					
1940		117	13					
1939		84	106					
1938		34						
1937		558						
1936		68						
1935								
1934		225						
1933								
1932		15						
1931								
1930		21	59					
1929		359						
1928		443						
1927		90						
1926		76						
1925		4						
1924								
1923		32						
TOTAL HA	19148.1	24647.1	63813.8	14319	12941.5	3422.9	3068.6	13652.7

Appendix 2 Treatment Regime Table

Updated to reflect more current Performance Measures September 2000.

Regimes	Opportunity Area (ha/yr)	Timber Supply Effects			Quality	Direct Jobs		Direct Cost $/ha	Habitat	Rank
		Short	Medium	Long		Silv Days/ha	Harv Days/m3			
1 **Backlog Brushing**	100	0	A++	A++	0	3				1
Spacing										
2 East G&M, Fdc @4.5m, 600-700sph Poor, Fdc @4.5m, 800-900sph	175	0	A+	A+	+					3
3 West G&M, Hem/C @5-6m, 800-1000sph Poor, Hem/C @5-6m, not spaced	150	0	A+	A+	+					4
4 **Habitat**	5% of above								+++	
Pruning										
5 East all stems, Fdc @4.5m, 1st lift 2.5m 300sph, Fdc @9m, 2nd lift 2.5m Remainder @ 3.0m	350	0	0	0	+++					3
6 West all stems, Hem/C @5-6m 1st lift 3m No second lift	150	0	0	0	++					5
Fertilization										
7 East P&M only, Fdc after CT	300	B+	B++	B++	0	0.1				2
After 2nd lift prune	200	0	0	0	+	0.1				6

Notes:

A-type timber supply effects are incorporated in the TSR base case.
B-type timber supply effects are incremental to the TSR base case.

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** 2002-2007 Resource Management Plan for Arrowsmith TSA (38)

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

2002-2007 Resource Management Plan for Arrowsmith TSA (38)
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1750	1750	1200	1200	1200	30.00	52500	2
Spacing	300	300	200	200	200	1800.00	540000	1
Pruning	50	50	50	50	50	1600.00	80000	3
Fertilizing	1000	500	500	400	400	275.00	275000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	3100	2600	1950	1850	1850	305.65	947,500	
Planning and prescriptions							0	
Total dollars							947,500	
Forest Health Enhancement								
Spacing	0	0	0	0	0	0.00	0	
Pruning	20	20	20	20	20	1,000.00	20000	1
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	20	20	20	20	20	999.90	20,000	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	1750	1750	1200	1200	1200	30.00	52,500	
Spacing	300	300	200	200	200	1,799.99	540,000	
Pruning	70	70	70	70	70	1,428.57	100,000	
Fertilizing	1000	500	500	400	400	275.00	275,000	
Other stand tending activities	0	0	0	0	0	0.00	0	
Totals hectares	3120	2620	1970	1870	1870	310.10	967,500	
Planning and prescriptions							0	
Studies funding							0	
Total dollars							967,500	

1/4/2006

2002-2007 Resource Management Plan for Arrowsmith TSA (38)
Backlog Program Table
For the 2002/03 Fiscal Year

Activities

Legal Obligations

	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	

Backlog Reforestation

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1000	3000	2000	1000	1000	20.00	20000	2
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	1000	3000	2000	1000	1000	20.00	20,000	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							20,000	

Impeded areas

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	700	500	200	100	100	35.00	24500	2
Brushing	700	700	500	200	100	1,000.00	700000	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1400	1200	700	300	200	517.50	724,500	
Prescriptions and planning dollars							0	
Total impeded areas							724,500	

Site Restoration

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	

Backlog Program Activities - Management Unit Total

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1700	3500	2200	1100	1100	26.18	44500	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	700	700	500	200	100	1,000.00	700000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	2400	4200	2700	1300	1200	310.21	744500	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							744,500	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

1/4/2006

2002-2007 Resource Management Plan for Arrowsmith TSA (38)
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.

The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

2) Related goal: The economic value of limber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.77	0	0	0	2.9	0.41	0.25	0	0.46	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	
Provincial factors for estimated value gain at harvest							5-15%	15-30%	1-5%	
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	0.95	2	2.25	3.75	5.5	0.1	0.1

Area affected by tree improvement, seedling production and silviculture surveys

Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	Nursery Seedling Production	Silviculture Surveys
A Tree improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	0		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	0		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			1,750
Total backlog surveys from the backlog table.			1,700
33% of all silviculture surveys			1,139
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply (A)			0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			1,139
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			0
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			400

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity.

2002-2007 Resource Management Plan for Arrowsmith TSA (38)
Performance Measures Based on Activities Planned for 2002/2003
Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	0	0	1,139	0	0	700	300	70	1,000	3,209	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	1	18,655	4,875	0	30,000		53,531
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			400								400
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.25	3.75	5.5	0.1	0.1	
3.2	Estimated total employment (person days/year)	0	0	114	0	0	1,575	1,125	385	100	321	
3.3	Estimated total full time equivalent positions (FTE)	0	0	1	0	0	9	6	2	1	2	20
4.1	**Forest Health Enhancement (ha)**											20
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											0
5.3	Est. area with secondary value provided to biodiversity (ha)											0

2002-2007 Resource Management Plan for Arrowsmith TSA (38)
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	3,120	2,620	1,970	1,870	1,870	310	967,500
Planning, prescriptions and seedlings							0
Backlog Program Field Activities	2,400	4,200	2,700	1,300	1,200	310	744,500
Planning, prescriptions and seedlings							0
Totals	5,520	6,820	4,670	3,170	3,070		1,712,000

Performance Measures

Potential total merchentable volume increment in 65 years	53,531 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	400 ha
Estimated total full time equivalent positions generated	20 FTEs
Forest health enhancement area	20 ha
Planned area for specific wildlife forage or habitat maintenance	0 ha
Estimated area with secondary value provided to biodiversity	0 ha

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): Arrowsmith TSA

Legal Obligation	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site preparation	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
B/L Reforestation									
Surveys	1000	1000	0	0	0	33	20	-39.4	
Site Prep	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	

Impeded	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	500	700	40	0	0	33	35	6.1	
brushing	500	700	40	0	0	1155	1000	-13.4	
Site Resoration									
Fill planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Rehab	0	0	#DIV/0!	0	0	2200	n/a	#VALUE!	
Reforestation	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): Arrowsmith TSA

Stand Tending	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)**
Surveys	1750	1750	0.0	2	2	33	30	-9.1	
Spacing	350	300	-14.3	1	1	1980	1800	-9.1	
Pruning	250	50	-80.0	3	3	2420	1600	-33.9	Type 2 Silviculture analysis suggest that this would be an appropriate level to achieve primary TSA objectives
Fertilizing	1000	1000	0.0	1	1	330	275	-16.7	
Forest Health	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)**
Spacing	0	0	#DIV/0!	0	0	1980	n/a	#VALUE!	
Pruning	150	20	-86.7	1	1	2420	1000	-58.7	Upon closer analysis we are not finding quite as much Pw pruning as we had thought previously.
Habitat Supply/ Biodiversity									
Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	
Non-Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	

F50-4 RMP
July 11, 2001

Ministry of Forests
4227 6th Avenue
Port Alberni, B.C.
V9Y 4N1
Attention: N.Nalleweg
Email: Norm.Nalleweg@gems2.gov.bc.ca

Dear Sir,

Re: **TFL 25 RMP Document and South Island District Spreadsheets**

Attached is the TFL 25 Sustainable Harvest overview document as well as the Enhanced, Backlog, Performance Measures, Management Unit Summary and comparison Tables for TFL 25 Block 1 required for the 2002/2003 Resource Management Plan. These spreadsheets outline projects that WFP would be able to undertake within the District.

If the funds available through the RMP process are insufficient to complete the proposed program, we will select a program of activities best suited to the amount available.

Please call if you have any questions.

Yours truly,
Western Forest Products Limited

K.J.McGourlick RPF
Mainland Islands Regional Forester

c.c. G.Hues
D.Stables
K.Hall

Naka Tree Farm Licence 25
Sustainable Harvest
2002/03 – 2006/07
Resource Management Plan
Overview Document

June 2001

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5.0 Proposed Program

6.0 Other Considerations

Attachments

The following tables are provided for the listed Forest Districts and TFL Blocks:

Tables
- Enhanced Forestry
- Backlog Program
- Performance Measure
- Management Unit Summary
- SH Plan Comparison

TFL Blocks and Forest Districts
- TFL 25 Block 1 Jordan River – South Island Forest District
- TFL 25 Block 2 Loughborough Inlet – Campbell River Forest District
- TFL 25 Block 3 Naka Creek – Campbell River Forest District
- TFL 25 Block 5 Swanson Bay – Mid Coast Forest District
- TFL 25 Block 5 Swanson Bay – North Coast Forest District
- TFL 25 Block 6 Moresby – Queen Charlotte Forest District

Introduction

This document is submitted in response to the Ministry of Forests request for a Resource Management Plan. The background information is drawn from Management Plan 9 for Tree Farm License (TFL) 25 and Management Plan 7 for the former TFL 24. Draft Management Plan 10 for TFL 25 has been submitted to government and distributed for public review but has not been used in the preparation of this package. The Timber Supply Analysis which will support MP 10 as well as an FRBC funded Type I/II analysis is in progress. Target completion dates are Fall 2001 and Spring 2002 respectively.

The RMP covers two forest Regions (Vancouver and Prince Rupert) as well as two FRBC Regions (Pacific and Skeena/Bulkley). Block 5 of the TFL is split into North Coast Forest District and Mid Coast Forest District. The Block 1, 2, 5 and 6 portions of the RMP are administered from WFP's Mainland Islands Region office in Campbell River. Block 3 is administered from WFP's North Vancouver Island Region office in Port McNeill. The following table shows the Tenure/Forest District/WFP Region/FRBC Region splits.

Table 1 – TFL Regions and Districts

TFL Block	WFP Region	MoF Region	MoF District	FRBC Region
Block 1	Mainland/Islands	Vancouver	South Island	Pacific
Block 2	Mainland/Islands	Vancouver	Campbell River	Pacific
Block 3	North Vancouver Island	Vancouver	Campbell River	Pacific
Block 5	Mainland/Islands	Vancouver	Mid Coast	Pacific
Block 5	Mainland/Islands	Prince Rupert	North Coast	Skeena Bulkley
Block 6	Mainland/Islands	Vancouver	Queen Charlotte	Pacific

The text references TFL 25 as a whole but separate tables are provided for each combination of Forest District and TFL Block. No modifications were made to the SH spreadsheets provided with the RMP instruction package. Although they do not apply to all areas, no changes were made to the broad Performance Measures provided on these sheets as we did not have TSA or Type I/II data to justify adjustments.

1.0 Basic Data

1.1 Administrative Information

Western Forest Products Naka Tree Farm License 25 is made up of five 5 administrative units. Two are located on Vancouver Island, two on the Mainland coast between Stafford Inlet and Douglas Channel and one on Moresby Island in the Queen Charlottes. Moresby Tree Farm License 24 was consolidated into TFL 25 in 1998 as Block 6. At the same time the Port McNeill unit (Block 4) of TFL 25 was amended into TFL 6. As a result, TFL 25 has Blocks 1, 2, 3, 5 and 6.

Block #1 is a 31,000 ha unit located west of Sooke between the Strait of Juan de Fuca and the San Juan Ridge. This area has been managed as a separate sustained yield unit within the TFL since the TFL was granted in 1958. Block 1 has reasonable silviculture program costs as the area is accessible and close to a competitive "live at home" silviculture workforce.

Block #2 is a 66,645 ha unit located in Loughborough Inlet. There are three sub-units: Heydon Bay, Apple River and Frazer Bay/Stafford Lake. From 1958 to 1988 Blocks 2, 3, and 5 of the TFL were managed together as a sustained yield unit, with harvest concentrated in Blocks 2 and 3 rather than 5. As a result the Heydon Bay and Apple River sub-units are now primarily second growth with most of the conventional mature timber being found in the Frazer Bay/Stafford Lake sub-unit. Block 2 has high silviculture program costs as the area is remote, costly to access and requires either expensive camp accommodations or expensive temporary facilities. WFP also partners with the local First Nation on silviculture projects so costs are also slightly higher.

Block #3 is a 16,305 ha unit located on Vancouver Island about 50 km east of Port McNeill. As noted under Block 2, this unit was managed in conjunction with blocks 2 and 5 from 1958 to 1988. As harvest did not start in this unit until the mid-1970's, there is not as much immature area proportionate to mature timber as in Block 2. Silviculture program costs are moderate. While site access is good, the unit is remote from established communities and requires silviculture contractors to either set up temporary facilities on site or commute from either Sayward or Woss.

Block #5 is located on the mainland coast between Bella Bella and Gardiner Canal. From 1958 until 1988, this unit was managed in conjunction with units 2 and 3. As a result harvest rates were low, so there are limited second growth management opportunities. Silviculture program costs in this block are very high. Sites are remote, access is very expensive and silviculture contractors have to use expensive camp accommodations or set up temporary facilities. WFP also partners with the local First Nation on silviculture projects so costs are also slightly higher.

Block 6 is located on Moresby Island in the Queen Charlottes. This 53,360 ha unit was formerly Tree Farm License 24. The majority of the northernmost subunit (Moresby) of this Block is older second growth. Current harvest is concentrated in the Sewell Inlet subunit. Silviculture program costs in this Block are high due to remote location and expensive camp accomodations.

1.2 Land Area

The following table summarizes the total and operable area in the TFL 25 by Block as found in the approved management plans (TFL 25 and former TFL 24). The operability has been revisited for Management Plan 10 and is currently being compiled. Significant changes are not expected.

Table 2 – Total and Operable Areas

TFL Block	Total Area (ha)	Operable Forest Area (ha)
1	32,250	21,400
2	66,650	12,950
3	16,300	8,650
5	311,950	48,610
6	53,670	23,310
Summary	480,820	114,960

1.3 Annual Allowable Cut (AAC) and Harvest Forecast

The BC Chief Forester has determined that each TFL Block be managed as a sustained yield unit with it's own yield analysis and AAC. The current AAC and a range of long-run sustained yield harvest rates (LRSY) by block are as follows:

Table 3 – MP 9 AAC and LRSY

TFL Block	AAC	Commercial Thinning	LRSY
1	175,000	10,000	157,000-173,000
2	92,000		65,000
3	55,000		37-54,000
5	255,000		215,000
6	115,000		181-200,000

1.4 Site Class Profile

The site class breakdown by TFL Block is dependent on the site index method used in the individual timber supply analysis. TFL Blocks 1, 3, and 6 site classes are based on WFP's ecological mapping and permanent sample plots. Blocks 2 and 5 are based on Ministry of Forest's methodology. The MoF data will be updated once WFP has completed ecological classification of Block 5. The current site index assignments by TFL Block are as follows:

Table 4 – Operable Area

TFL Block	Operable Area by Site Class (ha)		
	Good	Medium	Poor
1	6,924.6	11,433.5	3,313.1
2	1,139.3	10,301.5	1,668.0
3	2,542.4	5,327.7	1,024.6
5	5,511.4	33,059.0	10,038.0
6	7,743.0	14,439.0	2,362.0

1.5 Age Class Profile

The age class profiles from the current management plan forest inventory (current to Jan. 1, 1995) for the operable forest land is as follows:

Table 5 – Age Class Distribution

TFL Block	Immature (1- 140 Years)	Mature (141+ Years)
1	74%	26%
2	50%	50%
3	34%	66%
5	9%	91%
6	71%	28%
Total TFL	40%	60%

Since 1995 approximately 4,350 ha of predominantly mature timber has been harvested which would reduce the mature to 56% and increase the immature to 44% of the operable area.

1.6 Species Profile

The species profile as of January 1, 1995 was as follows:

Table 6 – Species Distribution

Block	Douglas-Fir	Red and Yellow Cedar	Western Hemlock	Balsam	Spruce	Deciduous
1	45%	17%	33%	2%	0%	3%
2	4%	32%	48%	14%	0%	2%
3	2%	36%	56%	6%	0%	0%
5	0%	42%	36%	18%	2%	2%
6	0%	15%	46%	0%	30%	9%
TFL	10%	28%	45%	8%	6%	3%

Checks of harvested volume since January 1, 1995 indicate that the inventory has been harvested according to the profile.

2.0 Timber Supply Issues

2.1 Timber Quantity

The TFL 25 Management Plan 10 Timber Supply Analysis is in process and due for submission in the fall. The TSA will fully incorporate the Forest Practices Code as well as new protected or protection areas, and will use spatial modeling to project sustainable development. The previous Management Plan projected the following:

Block #1

The harvest in this unit is 175,000 m3/year in the first decade. This rate will decline marginally to between 160,000 and 173,000 by decade 19 depending on the management assumptions used. This block is in rapid transition to a second growth based harvest structure so the future flow of timber from the block can be positively affected by enhanced silviculture treatments.

Block #2

The harvest in this unit is 92,000 m^3/year in the first decade declining to 60-65,000 m^3/year in decade 5. Current and future harvest levels incorporate a significant helicopter volume. The high proportion of second growth in this unit means that the future flow of timber from the block can be positively affected by enhanced silviculture treatments.

Block #3

The harvest in decade one is 55,000 m^3/year declining in decade two to 49,000 m^3/year. There is a significant reserve of mature timber in this unit.

Block #5

The harvest is 255,000 m^3/year declining to a LRSY of 212,000 m^3/year in decade two. The sustainable harvest level in this unit has been negatively impacted by the creation of the Spirit Bear Protection Area. A significant proportion of the remaining volume in this unit is helicopter based.

Block #6

The approved harvest is 115,000 m³/year declining to 98,800 m³/year in decade two, remaining at that level until 2059 when second growth areas begin to reach maturity. The projected harvest level then begins to rise towards a LRSY of between 170,000 and 190,000 m3/year depending on management and landbase assumptions. This unit has a significant age class gap resulting from the establishment of the South Moresby National Park reserve. Enhanced silviculture has the potential to bring the current growth increment to merchantable size more quickly.

Forest policy and factors affecting harvest rates have changed since the Timber Supply Analysis supporting the current TFL 25 annual allowable cut was completed. There have been operational constraints as a result of the implementation of the Forest Practices Code, new direction provided by regional planning processes (CCLRMP and VISLUP) and new landscape level policies such as the Identified Wildlife Management Strategy and Landscape Unit Planning. Blocks 1 and 3 are affected by the VISLUP while Blocks 2 and 5 are subject to initial and future CCLRMP recommendations. Block 5 has been impacted by the declaration of the Spirit Bear Protection Area and will be further affected by the final form that Ecosystem Based Forest Management takes within the various Option Areas.

It is anticipated that these new factors will put downward pressure on the AAC options that will be provided as part of the Timber Supply Analysis.

2.2 Timber Quality

The last Timber Supply Analysis projected that the bulk of the harvest volume in the short to mid-term, would continue to come from mature forests. In the mid to long term, harvest volumes will depend on second growth. If projected rotations do not allow time for the development of quality characteristics such as small knots, clear wood and mature fibre, there could be a reduction in stand value not only on a cubic meter basis but also on a per hectare basis.

WFP's growth and yield work indicates that rotations can be extended without a significant impact on LRSY as long as there is a reasonable age class distribution. Longer rotations are proposed in order to produce stands with an average diameter in the 40 to 45 cm dbh range.

A timber quality analysis produced for the current TFL 25 Management Plan compared second growth log grades predicted by the model to produced log grades from second growth logging. The analysis indicated that it was possible to produce a second growth log grade profile similar to our experienced production from second growth stands if an average diameter of between 35 and 45 cm was targeted.

The TFL 25 analysis confirmed that by extending rotations it would be possible to produce these diameters and improve log grades. Overall, the minor loss in quantity from a longer rotation is more than offset by an increase in quality and future value.

The analysis concluded that there was only weak economic justification for silviculture treatments that increased second growth diameters when compared to the benefits of longer rotations, However, it did note that pruning would be necessary if there was a desire to produce the highest value grades.

2.3 Forest Health

There have been minor forest health and protection issues over the history of TFL 25. Block 1 has scattered *Phellinus* and *Armillaria* root rot pockets. The other TFL Blocks have insignificant *Armillaria* and no *Phellinus* issues.

The most visible insect pests have been the Black Headed Budworm on the Queen Charlotte Island and Vancouver Island and the Spruce Shoot Weevil on Vancouver Island and the Mainland. The budworm has appeared on a regular ten to fifteen year cycle and has caused significant defoliation but little mortality. Volume losses have been factored into AAC calculations through the use of growth and yield data which includes depressed growth during insect attacks. The Canadian Forest Service indicated that the current outbreak in Block 6 collapsed in 2000.

The Sitka Spruce Shoot Weevil restricts the area where Sitka Spruce can be regenerated. The Weevil is being addressed through WFP's Saanich Forestry Center Tree Improvement Program which is cooperating with MOF Breeders to produce and evaluate weevil resistant seed sources.

Hemlock Dwarf Mistletoe is common in mature forests but has not been debilitating to regenerating stands as long as the predominant silvicultural system has been clearcut or clearcut with reserves. As management moves to various levels of retention, the impact of mistletoe on developing stands may increase. In clearcut or clearcut with reserve areas, mistletoe is addressed through regular and residual falling.

Deer browse of young trees is a minor concern in Block 1 and a serious problem in Block 6. In Block 6 deer target western red cedar seedlings until they reach breast height. This issue is being addressed through seedling protection at the time of planting. There is also minor second growth damage caused by porcupines in Block 5.

There are no plans for FRBC funded pest control programs. Endemic health issues are monitored through regular silviculture surveys. Atypical pest outbreaks are monitored with special surveys.

2.4 Habitat Supply

Landscape Unit Planning processes are being discussed in most TFL Blocks. These processes have been very slow to get of the ground. Initial Landscape Unit Planning will establish Old Growth Management Areas and target Wildlife Tree retention percentages. Stand level biodiversity initiatives, including Wildlife Tree patches, are currently incorporated in harvest planning. A brief summary of habitat issues by supply block is listed below:

Block 1

Discussions with MoELP are ongoing to address potential needs for Marbled Murrelets and ungulate winter ranges.

Block 2

Ungulate winter range and mountain goat winter range issues have been identified in a number of locations. Grizzly Bear habitat may be an issue on certain sites, but will be addressed in new silviculture prescriptions through grizzly bear stocking standards and riparian reserves. A Total Resource Plan for all species has been prepared for this Block.

Block 3

No significant wildlife issues have been identified.

Blocks 5

A number of wildlife studies have been conducted by WFP in support of management planning. Grizzly Bear habitat may be an issue on certain sites in Block 5, but will be addressed in new silviculture prescriptions through grizzly bear stocking standards and riparian reserves. WFP has been supporting Kermode research in Block 5 to better understand the higher instance of this recessive trait in black bears in the area.

Block 6

A number of biodiversity or wildlife studies have been conducted by WFP on a watershed basis. A number of habitat modification projects have been proposed under the FRBC EEV program but none have been started.

To date the WFP Sustainable Harvest Program has not focussed on habitat supply issues. There are no plans to push the Habitat Supply Program until program direction and overlaps betweem the EEV and SH programs are clearer.

3.0 Enhanced Backlog and Intensive Silviculture

3.1 History

A summary of historical silviculture work on TFL 25 is attached in appendix 1.

3.2 Effect on Previous Timber Supply Analyses

Brushing

Brushing has been conducted as a routine treatment to maintain conifer dominance on sites. As such, the historic brushing program has had no effect on the timber supply.

Pre Commercial Thinning (PCT)

The TFL 25 MP 9 Analysis assumptions incorporated historical levels of PCT into the base case harvest determination. The analysis also conducted sensitivity analyses, thinning up to 50-75% of the available projected growing stock in several supply blocks (1, 2, 3). The general impact on timber supply harvest volume level was slightly negative or positive depending on the specific assumptions for a given TFL Block.

PCT benefits include favourable values and harvest costs associated with the larger piece sizes resulting from PCT. Blocks 2 and 6 have degrees of age class imbalance, which will additionally benefit from PCT. Economic analyses at the stand level in TFL Management Plan 9 indicated positive net present value from PCT on good sites.

Pruning

The TFL 25 Timber Supply Analysis did not model pruning as pruning targets wood quality rather than volume. The only comment was that higher log grades would not be possible without pruning however a cost/benefit analysis for this was not done.

Fertilization

Fertilization of second growth mixed stands of cedar and hemlock that are dominated by salal show significant growth increases. Fertilization will also add volume and value to PCT and CT.

Block 1 contains some cedar–hemlock-salal sites that are nutrient deficient and will benefit from fertilization. MP 9 modeling of fertilization of all projected PCT and CT in Block 1 demonstrated that harvest levels were maintained but not increased. Montane screening trials have been encouraging. It is proposed that further screening trials be established in this Block. There may be opportunities for late rotational fertilization prior to harvest in second growth stands.

Blocks 2 and 3 contain some cedar-hemlock-salal sites that are nutrient deficient and will benefit from fertilization as well as managed second growth stands that have been spaced and pruned.

Block 5 has not traditionally been considered a good area to fertilize due to poor access. WFP established fertilizer screen trials in this area in spring 2001.

Block 6 has been extensively foliar sampled and has demonstrated endemic nutrient deficiencies. PCT and fertilization in this block will contribute to alleviating age class imbalance. Open grown spruce stands in this block have heavy limbs which reduce log value. Small operational trials are proposed to see if wood quality can be improved with pruning.

4.0 Future Timber Supply

4.1 Timber Supply Quantity and Quality Improvement

Conventional backlog treatments or intensive treatments such as precommercial thinning or convention stand fertilization have little impact on LRSY as long as there is a manageable immature age class distribution. If forest management policies create an immature age class imbalance, these treatments can smooth but not increase overall harvest flows.

SCHIRP research indicates that fertilization of young hemlock/cedar stands to attain crown closure can have a positive effect on site productivity and harvest rates, especially if the treatments result in permanent growth effects. Fertilization of PCT or CT areas can capture the increase in growing space and compensate for potential volume impacts from PCT.

However, ‘intensive’ basic practices which decrease regeneration delay, increase site occupancy, hasten free-growing and green-up or permanently increase site productivity could have the greatest effect on long term yields. The volume forecasts which WFP growth and yield models use are reduced by approximately 20% to recognize operational factors that reduce stocking and final volume on an area basis. It would be possible to reduce this Operational Adjustment Factor (OAF) through genetic improvement and an aggressive stocking and brushing program. The issue of an ‘enhanced’ basic program has been raised in the past but never approved for implementation by the Ministry of Forests or FRBC. An “enhanced” basic program is not proposed as part of this RMP.

5.0 Proposed Program

The proposed sustainable harvest programs have been attached for each TFL Block and Forest District. These programs cover currently eligible impeded backlog and enhanced silviculture projects. The focus of the program is to first address backlog issues and then focus on enhanced opportunities. The enhanced program has two goals. The first is to provide employment opportunities to First Nations in areas of chronic under-employment. The second, in areas where under employment is not a significant issue, is to focus on treatments which will maximize volume production or address age class imbalances.

Silviculture studies are proposed under the SH envelope to continue work on native grass seed for revegetation purposes in Block 1 (South Island) and to monitor fertilization screening trials in block 5 (North Coast).

6.0 Other Considerations

The provincial enhanced silviculture program has historically had a social component. The employment and social values were given even greater importance under the initial FRBC mandate. To date licensee and government programs have ensured that a proportion of the silviculture program was directed to local communities and First Nations.

Western Forest Products is encouraging the development of local First Nations silviculture contractors through the award of silviculture contracts at market prices. It is our expectation that RMPs will be able to retain sufficient flexibility to incorporate these programs and partnerships into new programs.

Appendix I

TREE FARM LICENCE 25
Historical Summary of Activities

Year	Denuded (ha)	Planted (ha)	No. Trees Planted	Juvenile Spacing (ha)	Brushing (ha)	Prescribed Burning (ha)	Mechanical Site Prep. (ha)	Fertilization (ha)	Pruning (ha)	Commercial Thinning (ha)
Pre 1965	6062.8	2628.2	2531100	0.0	153.1	711.1	36.5	0.0	0.0	0.0
1965	884.4	346.4	298500	0.0	4.1	564.9	0.0	0.0	0.0	0.0
1966	999.9	458.5	432800	40.1	1.2	341.2	0.0	0.0	0.0	0.0
1967	798.3	577.4	547650	0.0	623.0	477.3	0.0	0.0	0.0	0.0
1968	727.4	630.2	645250	0.0	143.2	308.4	0.0	0.0	0.0	0.0
1969	766.3	607.7	446100	15.8	62.8	321.1	0.0	0.0	0.0	0.0
1970	741.6	418.8	341450	0.0	279.5	305.6	0.0	0.0	0.0	0.0
1971	834.7	671.3	586700	0.0	37.0	187.6	0.0	0.0	0.0	0.0
1972	918.5	290.6	295300	0.0	11.3	284.3	0.0	0.0	0.0	0.0
1973	1084.5	942.3	772450	239.8	320.8	199.0	0.0	0.0	0.0	16.2
1974	911.4	444.1	363850	224.6	0.0	761.3	0.0	0.0	0.0	0.0
1975	729.8	214.4	199450	0.0	2.8	32.0	0.0	0.0	0.0	0.0
1976	1143.7	902.5	807250	53.5	4.5	674.5	2.4	0.0	0.0	0.0
1977	824.1	876.8	757550	535.1	15.3	0.0	0.0	0.0	0.0	0.0
1978	978.4	626.0	555600	569.5	8.0	390.0	14.0	522.5	0.0	29.2
1979	838.3	922.6	749000	620.5	35.0	663.0	0.0	40.0	0.0	40.0
1980	829.5	586.7	493650	667.3	79.9	256.0	12.0	737.5	0.0	60.0
1981	650.4	924.1	803900	615.2	31.6	342.5	0.0	0.0	0.0	34.7
1982	787.2	851.8	827700	0.0	0.0	0.0	0.0	223.8	0.0	0.0
1983	1236.1	757.7	669050	161.2	186.7	290.5	0.0	0.0	0.0	0.0
1984	1180.3	846.6	809000	99.0	376.9	118.4	0.0	0.0	0.0	0.0
1985	1010.1	576.0	522050	322.4	716.0	109.0	0.0	0.0	0.0	0.0
1986	985.7	748.5	630950	335.7	614.5	489.9	6.9	0.0	4.5	0.0
1987	1213.6	1605.4	1297750	485.5	712.8	100.7	0.0	0.0	17.2	0.0
1988	1239.6	1249.5	982850	57.4	928.7	70.0	26.3	22.6	11.6	0.0
1989	773.0	1026.1	735600	325.7	1314.5	165.8	31.2	0.0	6.6	0.0
1990	1078.5	847.0	712350	433.4	974.1	107.4	0.0	0.0	38.9	0.0
1991	796.2	1157.8	842850	705.6	33.1	38.4	0.0	0.0	3.2	0.0
1992	834.8	820.2	673900	869.0	2.1	19.0	0.0	1304.0	38.0	0.0
1993	907.6	733.1	639750	231.5	111.5	16.4	0.0	0.0	47.3	0.0
1994	1020.0	652.0	546000	511.5	338.7	9.5	38.1	0.0	157.8	0.0
1995	776.5	897.2	853050	721.4	515.1	48.5	0.0	581.4	308.6	0.0
1996	924.2	1103.8	1089750	319.8	168.9	0.0	8.5	1947.2	165.0	16.2
1997	850.5	904.9	951900	483.2	269.0	21.5	3.6	1061.9	313.9	25.0
1998	448.4	635.2	652250	404.5	440.7	0.0	10.0	0.0	236.1	26.4
1999	619.4	358.1	413000	234.3	143.7	0.0	14.8	2641.3	136.0	0.0
2000	734.6	744.2	752500	211.9	52.9	11.6	7.1	0.0	144.1	0.0
TOTAL	38140.3	29583.7	26229800	10494.4	9713	8436.4	211.4	9082.2	1628.8	247.7

- Historical Summary amended to remove the former TFL 25 Block 4 and include the former TFL 24.

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1985	1010.1	576.0	522050	322.4	716.0	109.0	0.0	0.0	0.0	0.0
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- Historical Summary amended to remove the former TFL 25 Block 4 and include the former TFL 24

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at
http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** Naka Tree Farm Licence 25 Block 1

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table
are summarized on the spreadsheet "Management Unit Summary."

Naka Tree Farm Licence 25 Block 1
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	625	550	50	50	50	33.00	20625	1
Spacing	25	25	25	25	50	2000.00	50000	1
Pruning	100	25	25	25	50	2400.00	240000	1
Fertilizing	500	0	500	0	300	415.00	207500	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	1250	600	600	100	450	414.50	518,125	
Planning and prescriptions							48,875	1
Total dollars							567,000	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	625	550	50	50	50	33.00	20,625	
Spacing	25	25	25	25	50	1,999.92	50,000	
Pruning	100	25	25	25	50	2,399.98	240,000	
Fertilizing	500	0	500	0	300	415.00	207,500	
Other stand tending activities	0	0	0	0	0	0.00	0	
Totals hectares	1250	600	600	100	450	414.50	518,125	
Planning and prescriptions							48,875	
Studies funding							20000	1
Total dollars							587,000	

1/4/2006

Naka Tree Farm Licence 25 Block 1
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							0	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

1/4/2006

Naka Tree Farm Licence 25 Block 1
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.
Potential volume/ha gain (m3/ha/yr) provincial factors:

0.77	0	0	0	2.9	0.41	0.25	0	0.46	

Years the factor will affect:

0	65	65	65	65	65	65	65	65	

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.
Provincial factors for estimated value gain at harvest

						5-15%	15-30%	1-5%	

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.
Est. short term employment rate (person days/ha) provincial factors:

0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	**Nursery Seedling Production**	**Silviculture Surveys**
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	0		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	0		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			625
Total backlog surveys from the backlog table.			0
33% of all silviculture surveys			206
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply		(A)	0
Surveyed area that will affect timber supply			
Replace with (A) if a more exact estimate is calculated			206
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR)			
Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas)			
Estimate area that will be classified as free growing after a survey in 2002/2003			

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity.

Naka Tree Farm Licence 25 Block 1
Performance Measures Based on Activities Planned for 2002/2003
Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	0	0	206	0	0	0	25	100	500	831	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	1	0	406	0	15,000		15,407
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	0	0	21	0	0	0	99	454	90	83	
3.3	Estimated total full time equivalent positions (FTE)	0	0	0	0	0	0	1	3	1	0	4
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											0
5.3	Est. area with secondary value provided to biodiversity (ha)											0

Naka Tree Farm Licence 25 Block 1
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	1,250	600	600	100	450	414	518,125
Planning, prescriptions and seedlings							68,875
Backlog Program Field Activities	0	0	0	0	0	0	0
Planning, prescriptions and seedlings							0
Totals	1,250	600	600	100	450		587,000

Performance Measures

Potential total merchentable volume increment in 65 years	15,407 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	4 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	0 ha
Estimated area with secondary value provided to biodiversity	0 ha

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): Naka TFL 25 Block 1

Stand Tending	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	625	625	0.0	1	1	33	33	0.0	NA
Spacing	25	25	0.0	1	1	1980	2000	1.0	NA
Pruning	100	100	0.0	1	1	2420	2400	-0.8	NA
Fertilizing	500	500	0.0	1	1	330	415	25.8	Mix of SCHIRP (P added) and conventional urea. SCHIRP higher cost.

Forest Health	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)
Spacing	0	0	#DIV/0!	0	0	1980	n/a	#VALUE!	
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Habitat Supply/ Biodiversity									
Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	
Non-Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): TFL 25 Block 1

Legal Obligation	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site preparation	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
B/L Reforestation									
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site Prep	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	

Impeded	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
Site Resoration									
Fill planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Rehab	0	0	#DIV/0!	0	0	2200	n/a	#VALUE!	
Reforestation	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	

WEYERHAEUSER COMPANY LIMITED

Tree Farm Licence 44
South Island Forest District

Sustainable Harvest RMP for 2002/2003

June, 2001

Prepared by:

Renewal Investment Corp.
Suite 3, 730 – 13th Avenue
Campbell River, BC
V9W 4H1

(250) 286-3323

Weyerhaeuser Company Limited
Sustainable Harvest RMP 2002/2003
TFL 44

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Silviculture Strategy

Tables

2001/2002 Plan Comparison

SilviConsult
Woody Crops Technology Inc.

Cees *("Case")* van Oosten
Email: silviconsult@telus.net

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Canada, V9T 4N3
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19 June 2001

SUBJECT: 2002-2003 RMP
REFERENCE: Version 19 June 2001

RMP-ALBERNI TFL 44 COMMENTS 2002-2003

Reference: Email correspondence to West Island Timberlands personnel on 15 June (Paul Dagg, Steve Hermant, Erin Badesso and Rick Player). New discussions with Mike Davis (Planning office) regarding riparian and non-riparian treatments on 17 May 2001). Responses from Rick Player and Steve Hermant (via email). Plan was largely based on discussions held on 11 August 2000.

Dated: 19 June 2001
Revised: 23 June 2001 – 2nd revision

1. BACKLOG ACTIVITIES

BACKLOG REFORESTATION

- **SURVEYS**

Plan - 2,000 hectares for 2002/2003

The level of 2,000 hectares of backlog surveys should be sufficient for overall planning, based on an estimate derived from the helicopter recce in May 2001. Backlog surveys usually also identify suitable White Pine pruning projects (Enhanced activities - see Forest Health Enhancement). For future years, Backlog survey hectares will drop because there is limited or no potential for planting, as determined during the 2000/2001 survey season.

- **SITE PREPARATION**

Plan – 0 hectares for 2002/2003

See comments on Planting below. Because no planting is anticipated, no site preparation is needed and the original 2000 RMP level for 2002/2003 of 50 hectares is no longer required.

- **PLANTING**

Plan - 0 hectares for 2002/2003

During the 2000/2001 we anticipated locating a significant amount of NSR areas in the so-called "shutdown" Balsam stands. We completed Surveys in 2000, but did not identify NSR areas that justified planting. Planting is therefore removed from the RMP. As a consequence there will also not be a provision for site prep in future years.

- **BRUSHING**

Plan - 400 hectares for 2002/2003

Brushing levels were expected to drop off from previous years; however, a helicopter recce in May 2001 showed additional areas that had not been identified previously. We identified in excess of 4,000 gross hectares of brushing surveys, evenly split between Sproat and Franklin. Based on the historic ratio of treatable hectares to survey area of 1:4, I would normally expect approximately 700 to 1000 hectares of brushing potential. Since we are picking up the guts and feathers of brushing potential in pre-October 1987 areas, I do not expect the surveys to yield more than 600 to 700 hectares of brushing. This would support a brushing level of 400 ha in 2002/2003 and 300 ha in 2003/2004. This amount also includes brushing not completed in 2001/2002 as a result of the extensive operational shutdowns at WIT Franklin and to a lesser degree at WIT Sproat. The 2002/2003 plan includes chemical brushing of maple at Sproat. Future hectares include provision to re-treat (partial) areas. These areas were identified during the helicopter recce in May 2001.

IMPEDED AREAS

- **BRUSHING**

Plan - 50 hectares planned for 2002/2003

Brushing is a catchall category to address snow-related problems (from the winter 1999/2000), if confirmed in 2001 during the surveys.

- **SURVEYS**

Plan - 1,100 hectares planned for 2002/2003

These surveys will determine damage caused by the heavy snowfall during the winter 1999/2000. This project is in response to questions asked by the divisions. I anticipate doing a helicopter survey, followed by about 100 hectares of ground truthing. This project will be on the condition that a helicopter recce and ground truthing will be completed during the summer and fall of 2001 (originally planned at 1,100 ha, but reduced in the plan to 695 ha).

2. ENHANCED FORESTRY ACTIVITIES

STAND TENDING

- **SURVEYS**

Plan – 6,000 hectares for 2002/2003

The plan includes 4,750 hectares of surveys, primarily to assess aerial fertilization blocks. Generally the survey levels increase with an increase of fertilization activities.

The survey budget includes funds for 500 hectares of riparian treatment surveys to identify variable density spacing opportunities to restore old growth attributes in the RRZ and RMZ. The budget also includes 750 hectares of non-riparian treatment surveys for projects such as creation of old growth attributes in areas where there is little or no representative old growth left. The latter project is contingent on the pending (?) approval of the Silviculture Study as identified in the 2001/2002 plan.

- **PRUNING**

Plan - 0 hectares planned for 2002/2003

Provisions are made to carry out second lift pruning in 2005/2006 in stands pruned during the period 1998-2000, where the first lift was to 2.5 m only.

- **FERTILIZATION**

Plan - 1,000 hectares for 2002/2003

There is an opportunity to carry out an aggressive program of aerial fertilization of suitable Fir stands and, to a lesser degree, Cw-Salal type stands (SCHIRP type project areas). The plan for 2002/2003 concentrates on Fir fertilization. Cw-Salal areas will be addressed later in the planning cycle. We need to address non-performing Fir plantations in the View Lake area, where carefully prescribed fertilization might kick-start these stands. A tentative area was identified that requires a review and prescription. Since this is a pre-87 opening, it could be done with FRBC funding. A careful review is required as part of the prescription phase. I expect this type of fertilization to start in 2002/2003.

The unit cost for the fertilization is $ 330/ha (aerial application). Hopefully this would also cover the general increase in urea costs.

FOREST HEALTH ENHANCEMENT

- **PRUNING**

Plan - 50 hectares for 2002/2003

There are excellent opportunities to prune White Pine in managing the Blister rust. Candidate stands (portions of stands) are continually identified during Backlog surveys. These stands are poorly stocked on nutrient- & moisture-stressed sites, where the White Pine component could contribute to the overall stocking levels of crop trees.

Survey needs for 2002/2003 are covered under Backlog surveys, as these areas are usually associated with alder brushing areas.

HABITAT SUPPLY AND BIODIVERSITY ENHANCEMENT

- **RIPARIAN TREATMENTS**

Plan – 100 hectares for 2002/2003

This project will from an increasingly important part of the total workload for our FN partnership. It covers riparian spacing in the riparian areas of selected creeks and river systems. This project requires a substantial investment in training crews in the safe execution of the Stand Management Prescriptions.

- **NON-RIPARIAN TREATMENTS**

Plan - 50 hectares for 2002/2003

Non-riparian variable density spacing was originally planned to start in 2003/2004, but should be moved up to 2002/2003 with the treatment of 50 hectares of "spacing to promote old growth attributes". This is a high priority project identified by Weyerhaeuser's Ray Bartram (in 2000) and confirmed by Mike Davis (in 2001). To quote the study proposal rationale:

> "*Weyerhaeuser planning staff identified two landscape units, one at the Franklin operations (Corrigan Landscape Unit – CWHXm1) and the other one at the Sproat operations (Sproat Lake landscape Unit – CWHVm1). Both Landscape Units are underrepresented by the old growth component, which restricts timing of and access to old growth timber harvesting*".

This project would follow a Silviculture Study proposed for 2001/2002; however, this study has yet to be approved by FRBC. Ray and Mike were of the opinion that this project is critical to being able to operate in these areas.

Originally non-riparian spring forage production treatments (50 ha of spacing) were scheduled for startup in 2002/2003 and a Silviculture Study was proposed to formulate the rationale We withdrew this study from the plan last year and we now propose that a similar study, now proposed for TFL 39, be the basis for future spring forage work in TFL 44.

INPUT PERFORMANCE MEASURES

I did not enter any hectares as Free Growing, as the emphasis is on Pre-Stand Tending Surveys, with the aim of locating treatment opportunities. As such the plan does not include Free Growing Assessments, as this would require yet another layer of surveys strictly for classifying stands, which is not regarded as efficient to locate potential treatment areas.

To complete the Performance Measures Table I would have used the TFL 44 factors produced by the Type I study. I checked the MOF website for the Type I study for TFL 44; however, there is currently no silviculture strategy for TFL 44 available on that website. Diane Medves advised me to use the MOF regional default measures factors.

Prepared by: Cees van Oosten

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** TFL 44 - ALBERNI

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

TFL 44 - ALBERNI
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	6000	6250	6500	6500	7000	33.00	198,000	1
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	35	0	0.00	0	
Fertilizing	1000	1200	1200	1200	1200	330.00	330,000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	7000	7450	7700	7735	8200	75.43	528,000	
Planning and prescriptions							20,000	1
Total dollars							548,000	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	50	50	50	50	50	1,500.00	75,000	1
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	50	50	50	50	50	1,499.94	75,000	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	100	100	125	125	125	3,000.00	300,000	1
Non-riparian treatments	50	150	300	300	300	3,000.00	150,000	1
Totals hectares	150	250	425	425	425	3,000.00	450,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	6000	6250	6500	6500	7000	33.00	198,000
Spacing	0	0	0	0	0	0.00	0
Pruning	50	50	50	85	50	1,499.97	75,000
Fertilizing	1000	1,200	1,200	1,200	1,200	330.00	330,000
Other stand tending activities	150	250	425	425	425	2,999.94	450000
Totals hectares	7200	7500	7750	7785	8250	146.25	1,053,000
Planning and prescriptions							20,000
Studies funding							
Total dollars							1,073,000

TFL 44 - ALBERNI
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	2000	1500	1000	500	500	33.00	66,000	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	400	300	150	75	50	1,155.00	462,000	1
Totals hectares	2400	1800	1150	575	550	220.00	528,000	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							20,000	1
Total backlog reforestation							548,000	
Impeded areas								
Surveys	1100	0	0	0	0	33.00	36,300	2
Brushing	50	50	0	0	0	1,155.00	57,750	2
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1150	50	0	0	0	81.78	94,050	
Prescriptions and planning dollars							2,000	2
Total impeded areas							96,050	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	3100	1500	1000	500	500	33.00	102300	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	450	350	150	75	50	1,155.00	519750	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	3550	1850	1150	575	550	175.22	622050	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							22,000	
Recommended studies								
Total backlog program							644,050	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

TFL 44 - ALBERNI
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on Provincial Default Values

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.
Potential volume/ha gain (m3/ha/yr) provincial factors:

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
0.77	0	0	0	2.9	0.41	0.25	0	0.46	

Years the factor will affect:

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
0	65	65	65	65	65	65	65	65	

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.
Provincial factors for estimated value gain at harvest

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
						5-15%	15-30%	1-5%	

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.
Est. short term employment rate (person days/ha) provincial factors:

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	Nursery Seedling Production	Silviculture Surveys
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	0		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	0		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			6,000
Total backlog surveys from the backlog table.			3,100
33% of all silviculture surveys			3,003
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply		(A)	0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			3,003
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			

Habitat Supply
Melp staff professional judgement used to estimate this performance measure

Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity	150

TFL 44 - ALBERNI
Performance Measures Based on Activities Planned for 2002/2003
Based on Provincial Default Values

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	0	0	3,003	0	0	450	0	50	1,000	4,653	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	1	11,993	0	0	30,000		41,993
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	0	0	300	0	0	1,175	0	227	180	465	
3.3	Estimated total full time equivalent positions (FTE)	0	0	2	0	0	7	0	1	1	3	13
4.1	**Forest Health Enhancement (ha)**											50
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											150
5.3	Est. area with secondary value provided to biodiversity (ha)											150

TFL 44 - ALBERNI
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	7,200	7,500	7,750	7,785	8,250	146	1,053,000
Planning, prescriptions and seedlings							20,000
Backlog Program Field Activities	3,550	1,850	1,150	575	550	175	622,050
Planning, prescriptions and seedlings							22,000
Totals	10,750	9,350	8,900	8,360	8,800		1,717,050

Performance Measures

Potential total merchentable volume increment in 65 years	41,993 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	13 FTEs
Forest health enhancement area	50 ha
Planned area for specific wildlife forage or habitat maintenance	150 ha
Estimated area with secondary value provided to biodiversity	150 ha

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): TFL 44 Weyerhaeuser

Stand Tending	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (include separate attachment if more space necessary with reference #)
Surveys	6000	6000	0.0	1	1	33	33	0.0	
Spacing			#DIV/0!			1980	n/a	#VALUE!	
Pruning			#DIV/0!			2420	n/a	#VALUE!	
Fertilizing	1000	1000	0.0	1	1	330	330	0.0	
Forest Health	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (include separate attachment if more space necessary with reference.#)**
Spacing			#DIV/0!	0		1980	n/a	#VALUE!	
Pruning	50	50	0.0	1	1	2420	1500	-38.0	White Pine pruning to control blister rust - expext cost to be $ 1,500/ha
Habitat Supply/ Biodiversity									
Riparian	100	100	0.0	1	1	3000	3000	0.0	This project was originally listed in the 2000/2001 RMP under Backlog Site Restoration - Rahabilitation at 100 hectares.
Non-Riparian	50	50	0.0	1	1	3000	3000	0.0	

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): **TFL 44 Weyerhaeuser**

Legal Obligation	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Surveys			#DIV/0!			33	n/a	#VALUE!	
Site preparation			#DIV/0!			1650	n/a	#VALUE!	
Planting			#DIV/0!			1320	n/a	#VALUE!	
Brushing			#DIV/0!			1155	n/a	#VALUE!	
B/L Reforestation									
Surveys	2000	2000	0	1	1	33	33	0.0	
Site Prep	50	n/a	#VALUE!			1650	n/a	#VALUE!	See comment below
Planting	200	0	-100	2		1320	n/a	#VALUE!	See RMP-Alberni TFL 44 Comments 2002-2003 Version 19 june 2001 Under Backlog - PLANTING (page 1 of 4)
Brushing	200	400	100	1	1	1155	1155	0.0	See RMP-Alberni TFL 44 Comments 2002-2003 Version 19 june 2001 Under Backlog - BRUSHING (page 1&2 of 4)
Impeded	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)**
Surveys	1100	1100	0	2	2	33	33	0.0	
brushing	50	50	0	n/a	2	1155	1155	0.0	
Site Resoration									
Fill planting			#DIV/0!			1320	n/a	#VALUE!	
Rehab			#DIV/0!			2200	n/a	#VALUE!	
Reforestation			#DIV/0!			1320	n/a	#VALUE!	

TFL Forest Ltd. - FRBC MYA CON 0001069 PAM 02405

RESOURCE MANAGEMENT PLAN

SUSTAINABLE HARVEST STRATEGIC OBJECTIVES

TREE FARM LICENCE NO. 46

2002/2003 to 2006/2007

This document and the attached tables recommend sustainable harvest activities in Tree Farm Licence No. 46 (TFL 46) to support the Forest Renewal BC (FRBC) Sustainable Harvest Strategic Objectives.

TFL 46 is held by TFL Forest Ltd (TimberWest) and is located within the Ministry of Forests' South Island Forest District.

Areas within the South Island Forest District's Timber Supply Area, within or adjacent to areas where TimberWest operates, are not included in this plan.

The 2001/2002 Resource Management Plan (RMP) for TFL 46 was revised by TimberWest's foresters to produce this plan.

A Type 1 Silviculture Strategy has not been prepared for TFL 46.

Despite increasing site-specific knowledge, a majority of backlog, enhanced and forest health treatment areas were not identified on the ground at the time this RMP was prepared. It is expected that strategic planning and field surveys being done in 2001/2002 will identify most treatment areas for 2002/2003 and a majority of the areas to be treated in subsequent years. This expectation meets the 2001/2002 FRBC Business Rule for the Sustainable Harvest program of preparing prescriptions for work in the current and following year.

Soon to be confirmed boundaries of recently 'grand parented' deer winter range management units and forage production zones will guide habitat management activities for deer. The development of habitat management guidelines for Black Bear denning habitat and the Pacific Region's Interim Habitat Silviculture Strategy will provide additional assistance to TimberWest in determining future initiatives for habitat supply activities within TFL 46.

REFERENCES AND ANALYSES

This plan is based on:

1. TimberWest Forest Limited, TFL 46 Management Plan No. 3, September 1996;
2. Timber Supply Analysis, April 1995, Appendix III to Management Plan No. 3;
3. Information Report No. 2 - TFL 46 Management Plan No. 3, Density Management: Assumptions in Timber Supply Analysis and Relationships to Future Product Opportunities;
4. Information Report No. 3 - TFL 46 Management Plan No. 3, Relationships between yield analysis assumptions, harvest strategies and stand management practices;
5. BC Ministry of Forests, TFL 46 Rationale for allowable annual cut determination, December 1996;
6. McWilliams, E.R.G. and R.E. Carter, 1998. Silviculture Investment Opportunities: A Methodology for Identifying Key Decision Variables. FRBC No. HQ96463-RE
7. B.A. Blackwell and Associates Ltd. 1999. Backlog and Enhanced Forestry Strategies within TFL 46.
8. Leigh-Spencer, S. 2000. TFL 46 Deer Winter Range and Forage Enhancement Management Plan
9. Local knowledge of TimberWest Foresters and Technicians

DESCRIPTION OF THE AREA

The following paragraph is paraphrased from BC Ministry of Forests, TFL 46 Rationale for allowable annual cut determination, December 1996.

TFL 46 is located between Cowichan Lake and Port Renfrew on the west coast of southern Vancouver Island. The topography of the area is variable, ranging from flat, alluvial river valleys to steep, rugged and rocky slopes. Most of the drainages in the TFL flow westward. The Cowichan Valley drains eastward through more gentle terrain than the west coast portion. A temperate, wet climate prevails over TFL 46 with an average annual precipitation of about 380 centimetres and average daily temperatures between -8 and 27 degrees Celsius. Snowfall is limited along the coastline but reaches as much as 100 centimetres in higher elevations. TFL 46 is dominated by Douglas-fir and hemlock stands, with smaller amounts of cedar, balsam and alder largely making up the remainder of the forested area. Because of the relatively long logging history in this area, much of the TFL is covered by young, second growth stands. The current AAC for the management unit is 535,000 cubic meters (effective December 1, 1996).

Basic Data

Total forested area	95,094 ha	(new compilation for current SMOOP)
Net harvestable area	70,512 ha	(new compilation for current SMOOP)
AAC	462,000 m3	(January 1, 1997 to December 31, 2001)

A new TFL 46 Management Plan No. 4 will soon be in effect.

Site Class Profile

Site Class	Percent
10	1.1%
15	3.9%
20	15.6%
25	37.9%
30	32.7%
35	7.8%
40	0.9%
45	0.2%
	100.0%

Species Profile

Lead species	Percent
Ac	0.0%
Ba	6.0%
Bg	0.1%
Cw	12.0%
Dr	2.1%
Fd	40.8%
Hw	35.9%
Mb	0.1%
Pl	0.0%
Pw	0.0%
Ss	0.2%
Wi	0.1%
Yc	2.6%
	100.0%

Age Class Profile

Age Range	Percent
0-9	9.3%
10-19	10.9%
20-29	10.1%
30-39	12.3%
40-49	11.0%
50-59	7.5%
60-69	3.5%
70-79	2.5%
80-89	0.5%
90-99	0.8%
100-109	0.1%
110-119	0.0%
120-129	0.0%
130-139	0.0%
150-159	0.0%
250+	31.4%
	100.0%

Silviculture History

See attached table.

As a consequence of the long harvesting history on this unit, the majority of the timber harvesting land base, about 78 percent, is covered by stands younger than 120 years of age. There are almost no stands currently between the ages of 120 and 250 years. Due in part to historical planting efforts, approximately 41 percent of the timber harvesting land base is covered by Douglas-fir (Fd) stands. When available, genetically improved seedlings were planted. Approximately 22,500 hectares have been pre-commercially thinned and about 11,600 hectares have been fertilized.

Harvest Forecast

The 1995 harvest forecast projects a sustainable timber supply of 535,000 cubic meters over the next 170 years. Most of this harvest will be from second growth stands. In 1999, a majority of private land within the TFL was removed. There was a further 5% reduction to the AAC when the ownership of the TFL changed to TimberWest in 1993. The net effect on the AAC for the public lands within the TFL is a reduction to 462,000 m^3/year.

The planning process for Management Plan No. 4 is underway. Inventory information, analyses and strategies to address issues will become available during the planning process or thereafter. Pertinent inventories and plans will be used to develop and refine this sustainable harvest plan when they become available.

Current NSR Status

Divisional foresters report that there are no significant areas of pre-1987 backlog non-sufficiently re-stocked (NSR) areas within TFL 46.

RECOMMENDED PROGRAM

Objective: Return on investment

Highest priority is given to silvicultural investments that generate a positive financial return.

Planned activities:

1. Aerial fertilization of Fd. Treatments are planned for 2001/2002 and subsequent years. Subsequent re-treatment of fertilized stands (multiple fertilization) may follow on a 6-10 year cycle once new suitable candidate stands are no longer available.

2. Ground-based, mechanical or manual fertilization of Fd. Annual program planned for intensively managed Fd plantations after spacing or thinning and for areas where Fd is left after variable retention harvest or in the leave strips between harvested areas. Candidate areas to be identified in 2001/2002 or 2002/2003.

3. Brushing of impeded stands. Small annual program planned. Areas to be located by backlog surveys to be done in 2001/2002. Not all areas logged prior to 1987 have been assessed for free-growing status and areas suspected to have unacceptable levels of vegetation competition will be surveyed.

4. Brushing of stocked productive sites along roads in free growing blocks and/or within the confines of the permanent access structures (productive fillslopes) of non-free growing blocks (i.e. areas within the block that are not

part of the net areas to be reforested and thus without basic silviculture obligations (NPunn)). Candidate areas to be identified in 2001/2002 or 2002/2003.

5. Reforestation of deactivated roads and landings under the EEV Program. Reforestation would be done with the objective of reducing the 'clearcut equivalent area.' Candidate areas to be identified 2001/2002. Planting may begin 2002/2003.

6. Planning, survey and treatment of areas which are to be intensively managed under a regime of:
   - limited juvenile spacing;
   - early-rotation fertilization; and,
   - periodic fertilization

   A reconnaissance of areas to be managed under this regime will be conducted in 2001/2002.

7. Juvenile spacing of dense stands, primarily to increase the proportion of Fd and Western red cedar (Cw). Another objective of this activity is to provide employment, principally for First Nations workers.

8. Additional treatments with positive financial return will be incorporated into the plan when (if) identified.

Objective: Increase tree windfirmness to allow future harvest pattern flexibility and maximize harvest opportunity.

Planned activities:

9. Spacing and thinning of dense stands to increase windfirmness. Work planned every year. Target areas are those to be harvested under variable retention systems or commercially thinned; applicable particularly to:
   - recreation areas,
   - areas adjacent population centers,
   - gullied terrain,
   - areas with increased water quality emphasis such as riparian management zones, community watersheds and domestic water supplies,
   - areas constrained for visual objectives, and
   - other constrained areas.

   The "buffer" strips adjacent park boundaries will be assessed in 2001/2002 and/or 2002/2003 for implementation of this objective.

Objective: Habitat supply: Management of deer winter range habitat.

Planned activities:

10. Spacing and possibly pruning and fertilization to encourage development of desired habitat conditions. Annual program planned. The objective is to ensure the availability of areas supplying desired forest characteristics while maximizing current and future harvest opportunities. Identification of candidate treatment areas requires deer forage management zones to be identified and management strategies prepared, which may be completed in 2001/2002.

Objective: To control a provincially designated noxious plant species.

Planned activities:

11. Conduct an inventory and survey program of 'Scotch Broom' sites in late spring of 2002/2003. Once sites have been mapped, conduct an aggressive program of control/eradication of this species in TFL 46. This species should be controlled before its distribution and numbers are no longer manageable and productive ground is lost. To be done in conjunction with TFL 46's neighbouring land managers' efforts to control this species.

Studies

One study is proposed:

1. To document cost of treatment and yield effect of mechanical roadside fertilization in areas commercially thinned and areas harvested under variable retention systems. $6,000 to establish and $1, 500 to repeat in second and third year. Please refer to the attached Study Outline.

Working Targets

1. Increase yields in short, medium and long term for areas fertilized, rehabilitated, and brushed. Most projects to yield a positive return on investment.

2. Develop stand structures that allow greater harvest flexibility in the medium and long term to support landscape, biodiversity, recreation, and water quality objectives.

ADDITIONAL REQUIRED RMP TABLES

Please find the additional required information attached which is part of this Resource Management Plan submission:

- Silviculture Treatment Regime Summary Table;
- Program Tables;
- Performance Measure Tables;
- Management Unit Summary Table;
- Table A Program Comparison Tables; and,
- Communication Log

This Resource Management Plan submission was prepared by David Elstone, RPF, of EBA Engineering Consultants Ltd. Should the reader have any questions about this Plan, please contact Mr. Elstone at 604-740-8094.

TFL 46 Sustainable Harvest RMP 2002/2003
Mechanical Roadside Fertilization Study

STUDY Outline

Short Description of Study	To explore road-based, mechanical spreading of fertilizer into variable retention harvest areas where Fd has been retained or into candidate stands of second growth Fd.
Background / Justification	Limited documented knowledge available. Proposed application method may be utilized in the future as harvesting in the roaded second growth stands increases. This technique may become a low cost alternative to that of an aerial application that requires large areas to make the treatment economical.
Methods & Procedures	Operational trials for assessment of distribution method and of growth response.
Lead Contact for Study	TFL Forest Ltd. and the Ministry of Forests
Key partners affected by this issue	Forest licensees
Temporal Scale of importance (how urgent is this?)	Short term effect
Spatial Scale (small vs wide reaching impacts)	On a block by block basis as set up in a sample population matrix.
Link to Resource Management Plans, Timber Supply Review, higher level plans	TFL 46 RMP 2002/2003.

Strategic Objectives: (tick all that apply)	**SH**[1]	**EEV**	**SSFM**	**C&I**	**VA**[2]	**WF**
	X					

Region: Vancouver **Study (Y/N): Y**
New Project for 2002/03 (Y/N): Y
Proponent: TFL Forest Ltd.
Number of years to complete: 3

Mgmt. Unit: TFL 46
$ to Complete $6,000 in first year and $1500 in year two and three (est.)
Workplan #: PAM 02405
Activity Location #: N/A

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[1] SH = Sustainable Harvest EEV = Enhance Environmental Values SSFM = Strengthen Sustainable Forest Management C&I = Criteria and Indicators of Sustainability VA = Value Added CO = Communities WF = Workforce

[2] We will include needs for these strategic objectives if identified but will not ask specifically for these needs.

SILVICULTURE HISTORY
TFL 46 (INCLUDING TFL 22)

Year	Logged	Planted	Fert	Juvenile Spaced	Pruned	Fires	Site Preperation	Brushed
1955	417	368						
1956	516	301						
1957	578	492						
1958	712	655						
1959	564	579						
1960	652	679						
1961	633	1255						
1962	708	1304						
1963	868	1003						
1964	881	1374						
1965	935	1675		13				
1966	902	2137		49				
1967	997	1851		58				
1968	1022	1484		83				
1969	923	1388		180				
1970	775	1580		183				
1971	772	1225		192				
1972	746	1133		210				
1973	904	1507		616				
1974	952	1508		643				
1975	596	993	223	540				
1976	1054	1418	255	1957				
1977	1088	1595	404	2739				
1978	1209	1472	764	2486				587
1979	1243	1331	1357	2650				494
1980	1187	1194	2021	1709				404
1981	1029	1734	2362	2126		26		214
1982	790	1593	3885	777				156
1983	690	787		1315	17			242
1984	992	931		200	128	102		276
1985	1112	1237		569	37		595	463
1986	802	404		628	25		18	129
1987	1279	995		941			238	380
1988								
1989	751	1534	9	66			208	
1990	540	229				1	263	
1991	695	1226					484	8
1992	408	225		260		3	40	158
1993	402	1351		640	10			34
1994	498	632		440	67	1	23	252
1995	382	1080					24	65
1996	388	1019	211	16		2		84
1997	414	769	104	51		1		62
1998	321	365	18	8				83
1999	443	288	350	109	21			61
2000	603	383	404	105.3	36	0.3	45	106.2
Total	34373	48283	12367	22559.3	341	136.3	1938	4258.2
Average	781	1097	281	513	8	3	44	97

TFL 46 - SUSTAINABLE HARVEST RESOURCE MANAGEMENT PLAN 2002/2003
REGIME SUMMARY

Activities *	Objective *	Area/year ** (5 yr average)	Yield effect Short	Yield effect Medium	Yield effect Long	Quality	Habitat effect OG	Habitat effect Riparian	Habitat effect Wildlife	employment (days/ha)	cost ($/ha)	Rank
Site Restoration												
roadside brushing	Investment 4	30		+	+	+				3.0	1400	1
scotch broom control	Plant Control 11	10		+	+				+	4.0	1600	2
planting of deactivated roads and landings	Investment 5	5			+					2.0	1320	2
Impeded Areas												
backlog brushing	Investment 3	15			+	+				3.0	1400	2
Stocking Control (Spacing)												
intensively managed roadsides	Investment 6	25		+	+	+				4.0	1800	2
windfirmness	Windfirmness 9	10			+		+	+	+	4.0	1800	2
spacing	Investment 7	69		+	+				+	4.0	1800	2
Fertilization												
mid to late rotation Fd	Investment 1	450	+	+	+		+		+	0.2	325	1
intensively managed roadsides	Investment 6	25		+	+					1.0	450	1
ground-based application in Fd stands	Investment 2	25	+	+	+		+		+	1.0	450	1
Habitat Supply												
various stand management treatments	Habitat 10	50	+	+	+		+	+	+	5.0	3000	2

* refer to Resource Management Plan document, RECOMMENDED PROGRAM

** some activities are planned to be delivered within one or two years for efficiency, do not begin immediately, or increase gradually to target levels.

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement. The template design allows completion in a consistent format for all management units across the province. Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** Tree Farm Licence No. 46

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

Tree Farm Licence No. 46
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1000	1000	750	750	750	33.00	33000	1
Spacing	120	120	120	80	80	1800.00	216000	2
Pruning	0	0	0	0	0	0.00	0	
Fertilizing	500	500	500	500	500	350.00	175000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	1620	1620	1370	1330	1330	261.73	424,000	
Planning and prescriptions							25,000	1
Total dollars							449,000	
Forest Health Enhancement								
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	50	50	50	50	50	3,000.00	150000	1
Totals hectares	50	50	50	50	50	2,999.94	150,000	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	1000	1000	750	750	750	33.00	33,000	
Spacing	120	120	120	80	80	1,799.99	216,000	
Pruning	0	0	0	0	0	0.00	0	
Fertilizing	500	500	500	500	500	350.00	175,000	
Other stand tending activities	50	50	50	50	50	2,999.76	150000	
Totals hectares	1670	1620	1370	1330	1330	343.71	574,000	
Planning and prescriptions							25,000	
Studies funding							6000	2
Total dollars							605,000	

Tree Farm Licence No. 46
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	0.00	0	
Site Preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							0	
Impeded areas								
Surveys	75	50	25	25	25	33.00	2475	2
Brushing	15	15	15	15	15	1,400.00	21000	2
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	90	65	40	40	40	260.83	23,475	
Prescriptions and planning dollars							0	
Total impeded areas							23,475	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	40	40	40	40	40	1,400.00	56000	1
Reforestation	5	5	5	5	5	1,320.00	6600	2
Totals hectares	45	45	45	45	45	1,391.08	62,600	
Seed purchase	5,000	5000	5000	5000	5000	0.67	3,350	2
Prescriptions and planning dollars							0	
Total site restoration							65,950	
Backlog Program Activities - Management Unit Total								
Surveys	75	50	25	25	25	33.00	2475	
Site preparation	40	40	40	40	40	1,399.93	56000	
Planting	5	5	5	5	5	1,319.21	6600	
Brushing	15	15	15	15	15	1,399.81	21000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	135	110	85	85	85	637.54	86075	
Seed purchase	5000	5000	5000	5000	5000	0.67	3350	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							89,425	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Tree Farm Licence No. 46
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.77	0	0	0	2.9	0.41	0.25	0	0.46	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	
Provincial factors for estimated value gain at harvest							5-15%	15-30%	1-5%	
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area: Tree Improvement	Area: Nursery Seedling Production	Area: Silviculture Surveys
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	5		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	5		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			1,000
Total backlog surveys from the backlog table.			75
33% of all silviculture surveys			355
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply		(A)	0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			355
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			0
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			75

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity. 50

Tree Farm Licence No. 46
Performance Measures Based on Activities Planned for 2002/2003
Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	5	0	355	40	5	15	120	0	500	1,090	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	956	400	1,950	0	15,000		18,306
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			75								75
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	1	0	35	38	10	39	475	0	90	109	
3.3	Estimated total full time equivalent positions (FTE)	0	0	0	0	0	0	3	0	1	1	4
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											50
5.3	Est. area with secondary value provided to biodiversity (ha)											50

Tree Farm Licence No. 46
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	1,670	1,620	1,370	1,330	1,330	344	574,000
Planning, prescriptions and seedlings							31,000
Backlog Program Field Activities	135	110	85	85	85	638	86,075
Planning, prescriptions and seedlings							3,350
Totals	1,805	1,730	1,455	1,415	1,415		694,425

Performance Measures

Potential total merchentable volume increment in 65 years	18,306 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	75 ha
Estimated total full time equivalent positions generated	4 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	50 ha
Estimated area with secondary value provided to biodiversity	50 ha

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): Tree Farm Licence No. 46

Stand Tending	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)**
Surveys	1500	1000	-33.3	1	1	33	33	0.0	Anticipate reduced requirement to survey areas for identification of treatment areas
Spacing	90	120	33.3	2	2	1980	1800	-9.1	The 120 ha of the 2002/03 plan accounts for spacing opportunities for windfirmness and postive return on investment objectives. and are based on what was accomplished in 2000/2001
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Fertilizing	1000	500	-50.0	1	1	330	350	6.1	The 2001/02 plan overestimated the amount of area known to be available for fertilization
Forest Health	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)**
Spacing	0	0	#DIV/0!	0	0	1980	n/a	#VALUE!	
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Habitat Supply/ Biodiversity									
Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	
Non-Riparian	10	50	400.0	2	1	3000	3000	0.0	

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): **Tree Farm Licence No. 46**

	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Legal Obligation									
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site preparation	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
B/L Reforestation									
Surveys	100	n/a	#VALUE!	2	0	33	n/a	#VALUE!	No opportunities identified during the preparation of the 2002/03 plan.
Site Prep	3	n/a	#VALUE!	2	0	1650	n/a	#VALUE!	No opportunities identified during the preparation of the 2002/03 plan.
Planting	3	n/a	#VALUE!	2	0	1320	n/a	#VALUE!	No opportunities identified during the preparation of the 2002/03 plan.
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
	Last Year's 2002/2003 ha	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)**
Impeded									
Surveys	200	75	-62.5	1	2	33	33	0.0	The 2001/02 plan over-estimated the amount of backlog free growing areas that have yet to be surveyed.
brushing	30	15	-50	1	2	1155	1400	21.2	The 2001/02 plan over-estimated the amount of backlogs areas requiring brushing.
									Proposed costs have not changed from the 2001/02 plan.
Site Resoration									
Fill planting	0	0	#DIV/0!	0	0	1320	0	-100.0	
Rehab	0	40	#DIV/0!	0	1	2200	1400	-36.4	Includes Scotch Broom control and roadside brushing which were not identified in previous RMPs.
Reforestation	2	2	0	1	2	1320	1320	0.0	$/ha for brushing should be comparable to brushing backlog sites.

Agency: TFL Forest Ltd
TFL: 46
TSA:

Communication Log for the Sustainable Harvest Objective 2002-2003

(also include community/stakeholder meetings to review silviculture strategies and SH plans)

Date	Name (person contacted)	Representing	Communication Method	Comments/Issues
21-Jun-01	Tom Jones	TFL HBO Operations	Meeting at Gordon River	Revised 2001/02 RMP to the 2002/03 RMP.
	Blair Pigeon	TFL HBO Operations		
	David Elstone	EBA Planning and Implementation Contractor		
21-Jun-01	Sherry Niederleitmer	TFL HBO Operations	Meeting at Gordon River	Deer winter range and forage management issues.
	David Elstone	EBA Planning and Implementation Contractor		
22-Jun-01	Ron Wellmann	TFL HBO Operations	Phone Conversation	Revised 2001/02 RMP to the 2002/03 RMP.
	David Elstone	EBA Planning and Implementation Contractor		
25-Jun-01	Frank Barber	Ministry of Forests	Phone Conversation	Performance Measure Calculator
	David Elstone	EBA Planning and Implementation Contractor		
26-Jun-01	Blair Pigeon	TFL HBO Operations	Email	TimberWest Divisional approval of 2002/03 RMP.
	David Elstone	EBA Planning and Implementation Contractor		
26-Jun-01	Jack Turley	TFL Forest Ltd. - FRBC Manager	Phone Conversation	TimberWest approval of 2002/03 RMP.
	David Elstone	EBA Planning and Implementation Contractor		

TFL 54: 2002 – 2003

Resource Management Plan

June 26, 2001

FRBC Incremental Silviculture Program

In the absence of a TFL 54 Incremental Silviculture Strategy, which at the time of writing is in the initial stages, the Silviculture Program is based on local knowledge, Silviculture assessments and an extensive reconnaissance level overview of second growth stands. Identified silviculture treatments attempt to anticipate the final Incremental Silviculture Strategy.

General Program

TFL North (Escalante)

This portion of the TFL was extensively developed in the early-mid 1980s and the main silvicultural treatment is Brushing & Weeding (Dr), the majority of which will be treated in 2001. Most stands are past the size where either pruning or juvenile spacing is acceptable. The focus here will be to declare stands free to grow as they respond to current Brushing & Weeding.

1 Alder brushing – Minor amounts of alder girdling may persist into 2002-2003. Access is good with active mainlines and camp infrastructure.

2 Silviculture Assessments – Areas treated for alder in 2001 will be available for free growing assessments in 2003. These assessments will provide updated inventory and site indices.

TFL 54 Central (Clayoquot Sound)

This portion of the TFL extends from east of Tofino to Hesquiaht and includes Fortune Channel, Beddingfield, Bedwell Sound, Catface. Most development was in the early-mid 1980s and is distributed across the whole region. The main silvicultural treatment anticipated is Brushing & Weeding (Dr), the majority of which will be treated in 2002. Most of the 2002 brushing budget will be for several large openings in Beddingfield. Although most stands are thought to be past the size where either pruning or juvenile spacing is acceptable, silviculture assessments in 2001 will provide details on whether juvenile spacing or pruning opportunities exist in this area. The focus here will be to declare free to grow from current assessments and as stands respond to Brushing & Weeding.

TFL 54 South (Ucluelet, Tofino & Kennedy Flats)

The southern portion of the TFL represents the majority of silviculture treatments for the TFL during the 5-year RMP planning horizon. The area is characterized by a roughly 40/60 split between A), 40% upland sites on the slopes of minor mountains (Muriel Ridge to the north near Clayoquot Arm and Wiessen Hill and Mount Frederick near Ucluelet) and B), the 60% outer coastal plain stretching from Grice Bay to Ucluelet.

The upland sites have no access after high priority slope restoration took place in the mid-1990s. Silviculture surveys will be conducted with helicopter support in 2001. It is anticipated that most of these sites will be declared free growing. Minor amounts of brushing & weeding (Dr) will likely be required in 2002. Special consideration will be given to treatments that accelerate the visual restoration of the Pacific Rim Highway Scenic Area.

The coastal lowland sites represent opportunities for fertilization in salal dominated Cw sites. Silviculture assessments in 2001 will drive this program. A minor amount of aerial fertilization will take place in the 2001 fiscal year. Minor amounts of brushing & weeding (Dr) are required for 2002.

Discussion of variances from the 2000 RMP for 2002.

The only variance is in the Backlog Forestry program. The Survey plan has gone to 2200 ha from NIL. These surveys are required to complete a silviculture inventory of second growth forests. This amount should have been identified in the 2000 RMP but was mistakenly left off. The areas to be surveyed were reconnoitered in 1999.

The other variance is the increase in the brushing category. Additional Dr stands have been identified throughout the TFL.

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** TFL 54 Interfor West Coast Escalante/Clayoquot/Kennedy

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

TFL 54 Interfor West Coast Escalante/Clayoquot/Kennedy
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	#DIV/0!	0	1
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Fertilizing	380	200	200	200	200	330.00	125400	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	380	200	200	200	200	330.00	125,400	
Planning and prescriptions							0	
Total dollars							125,400	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0
Pruning	0	0	0	0	0	0.00	0
Other treatments	0	0	0	0	0	0.00	0
Totals hectares	0	0	0	0	0	0.00	0

Habitat Supply and Biodiversity Enhancement

Riparian treatments	0	0	0	0	0	0.00	0
Non-riparian treatments	0	0	0	0	0	0.00	0
Totals hectares	0	0	0	0	0	0.00	0

Domestic Range

Treatments	0	0	0	0	0	0.00	0

Enhanced Forestry Activities - Management Unit Total

Surveys	0	0	0	0	0	#DIV/0!	0
Spacing	0	0	0	0	0	0.00	0
Pruning	0	0	0	0	0	0.00	0
Fertilizing	380	200	200	200	200	330.00	125,400
Other stand tending activities	0	0	0	0	0	0.00	0
Totals hectares	380	200	200	200	200	329.99	125,400
Planning and prescriptions						$35	0
Studies funding							0
Total dollars							125,400

TFL 54 Interfor West Coast Escalante/Clayoquot/Kennedy
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	#DIV/0!	0	0
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	0	0	0	0	0	#DIV/0!	0	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	10	5	0	0	0	1,450.00	14500	1
Brushing	0	0	0	0	0	0.00	0	
Totals hectares	10	5	0	0	0	1,449.71	14,500	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total backlog reforestation							14,500	
Impeded areas								
Surveys	2200	239	200	200	50	40.00	88000	1
Brushing	200	100	100	50	50	1,250.00	250000	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	2400	339	300	250	100	140.83	338,000	
Prescriptions and planning dollars							0	
Total impeded areas							338,000	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	2200	239	200	200	50	40.00	88000	
Site preparation	0	0	0	0	0	0.00	0	
Planting	10	5	0	0	0	1,449.57	14500	
Brushing	200	100	100	50	50	1,249.99	250000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	2410	344	300	250	100	146.26	352500	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning						$35	46,200	
Recommended studies							0	
Total backlog program							398,700	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

TFL 54 Interfor West Coast Escalante/Clayoquot/Kennedy
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
The stewardship plan is based on the results of current survey activitity and local knowledge. Factors used are the regional averages.

The following default provincial factors may be replaced by management unit specific factors.

The following provincial factors are used to generate the table. No local factors were available at the time this RMP was prepared.

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3) Estimates of annual growth rate increase from each type of treatment over no treatment. **Potential volume/ha gain (m3/ha/yr) provincial factors:**	0.77	0	0	0	2.9	0.41	0.25	0	0.46	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	
2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%. **Provincial factors for estimated value gain at harvest**							5-15%	15-30%	5%	
3) Corporate commitment to employment Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare. **Est. short term employment rate (person days/ha) provincial factors:**	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys

Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

		Area	
	Tree Improvement	Nursery Seedling Production	Silviculture Surveys
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	10		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	10		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity. These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			0
Total backlog surveys from the backlog table.			2,200
33% of all silviculture surveys			726
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			100
Estimate area of free growing surveys			1,200
Estimate area of pre-stand tending surveys			900
Estimate of total surveys that will affect timber supply (A)			2,200
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			2,200
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			200
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			1,000

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity.

TFL 54 Interfor West Coast Escalante/Clayoquot/Kennedy
Performance Measures Based on Activities Planned for 2002/2003
The stewardship plan is based on the results of current survey activitity and local knowledge. Factors used are the regional averages.

	Performance Measure	Tree Improve-ment	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	10	0	2,200	0	10	200	0	0	380	2,800	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	1,912	5,330	0	0	11,400		18,642
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			200								200
1.5	Est. area that will be declared as free growing (ha)			1,000								1,000
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	0.05		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	1	0	220	0	20	522	0	0	68	280	
3.3	Estimated total full time equivalent positions (FTE)	0	0	1	0	0	3	0	0	0	2	6
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											0
5.3	Est. area with secondary value provided to biodiversity (ha)											0

TFL 54 Interfor West Coast Escalante/Clayoquot/Kennedy
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	380	200	200	200	200	330	125,400
Planning, prescriptions and seedlings							0
Backlog Program Field Activities	2,410	344	300	250	100	146	352,500
Planning, prescriptions and seedlings							46,200
Totals	2,790	544	500	450	300		524,100

Performance Measures

Potential total merchentable volume increment in 65 years	18,642 m^3
Estimated ha that will be reclassified as stocked	200 ha
Estimated ha that will be declared as free growing	1,000 ha
Estimated total full time equivalent positions generated	6 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	0 ha
Estimated area with secondary value provided to biodiversity	0 ha

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL):

Stand Tending	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Spacing	0	0	#DIV/0!	0	0	1980	n/a	#VALUE!	
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Fertilizing	380	380	0.0	0	1	330	330	0.0	
Forest Health	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)**
Spacing	0	0	#DIV/0!	0	0	1980	n/a	#VALUE!	
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Habitat Supply/ Biodiversity									
Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	
Non-Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	

WEYERHAEUSER COMPANY LIMITED

Tree Farm Licence 57
South Island Forest District

Sustainable Harvest RMP for 2002/2003

June, 2001

Prepared by:

Renewal Investment Corp.
Suite 3, 730 – 13th Avenue
Campbell River, BC
V9W 4H1

(250) 286-3323

Weyerhaeuser Company Limited
Sustainable Harvest RMP 2002/2003
TFL 57

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Silviculture Strategy

Tables

2001/2002 Plan Comparison

SILVICONSULT
Woody Crops Technology Inc.

Cees (*"Case"*) van Oosten
Email: silviconsult@telus.net

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Canada, V9T 4N3
Bus: 250-758-8230
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20 June 2001

SUBJECT: 2002-2003 RMP
REFERENCE: Version 17 June 2001

RMP-TFL 57 COMMENTS 2002-2003

Dated: 17 June 2001
Revised: 23 June 2001

1. BACKLOG ACTIVITIES

BACKLOG REFORESTATION

- **SURVEYS**

Plan - 2,000 hectares for 2002/2003

The level of surveys remains at 2,000 hectares, since there was a reduction from plan in 2001. The surveys include pre-stand tending surveys for sites where alder will need treatment and for sites where FG declaration can be made (especially sites where alder treatments have been completed in 1998 - 2000). An important issue is reduction of liability.

- **BRUSHING**

Plan - 300 hectares for 2002/2003

Backlog brushing: primarily red alder that has in-filled plantations and reduces growth potential of the conifers; target strategy for blocks where roads are being deactivated in the next few years; to permit FG declaration following treatments.

IMPEDED AREAS

- **SURVEYS**

Plan - 100 hectares for 2002/2003

Impeded area surveys: includes exploration into sites with Douglas-fir and snow pressed sites; to determine opportunity for sanitation cutting out of the defective or ecologically off-site species.

- **BRUSHING**

Plan - 100 hectares for 2002/2003

Brushing is a catchall category for below-mentioned projects.
Species conversion: continue with removal of off-site Douglas fir from Cw/Hw sites; optimizes future growth and yields. Possibility to include the removal of dense stands off-site Amabilis fir (which are shutting down) and release the preferred Cw, Yc, Hw. The 2001-2002 RMP identified 100 hectares for treatment, but none were approved for the 2001-2002 plan, hence the increase in hectares for treatment in 2002-2003.

1. ENHANCED ACTIVITIES

STAND TENDING

- **SURVEYS**

Plan - 600 hectares for 2002/2003

Enhanced surveys: primarily to conduct surveys into riparian networks alongside Tranquil River, Kennedy River, Clayoquot Arm and Cypre where adjacency, visual quality, and wind firmness benefits can increase accessible timber harvest land base.

- **SPACING**

Plan - 0 hectares for 2002/2003

Provisions are included in the plan to carry out some spacing starting in 2003/2004; target snow-press susceptible HwBa stands or large homogenous openings to promote structural diversity and flexibility for 2nd growth harvest planning (spaced stands will be more wind firm and can serve as leave areas).

- **PRUNING**

Plan - 0 hectares for 2002/2003

Pruning: follow-up 2nd lift in 2004 – 2006 to openings treated in 1997-1999; for increased wood quality; stands with extended rotations.

- **FERTILIZATION**

Plan - 300 hectares for 2002/2003

Fertilization: with promising results from SCHIRP trials, fertilize Cw-Salal dominated sites for increased Cw growth and crown closure achievement. Included in this project is fertilization on Salal-dominated sites where Amabilis Fir is shutting down. Treatments will also hasten FG attainment for marginal sites. Although 300 hectares of fertilization were identified for 2001-2002, none were approved.

The unit contract cost for the fertilization is $ 400/ha (aerial application). This allows for the application of "non-traditional" mixes, e.g. SCHIRP.

- **OTHER**

  Plan - 0 planned for 2002/2003

  Provisions are made to convert older stands, now dominated by mature alder, to conifer sites, using the existing (but overtopped) conifer component. This project will take place in isolated areas. There is no opportunity to remove the alder in a commercial operation, as the conifer component needs to be released gradually. The first 50 hectares will receive treatment in 2003-2004, with the second treatment in 2005-2006. The second 50 hectares will be treated in 2004-2005, with the follow up treatment in 2006-2007. The two-year lag meets the requirement for a gradual release, while allowing retreatment that would meet safety requirements.

HABITAT SUPPLY AND BIODIVERSITY ENHANCEMENT

- **RIPARIAN TREATMENTS**

  Plan - 50 hectares for 2002/2003

  Hydro-riparian spacing: Tranquil River, Cypre River, Kennedy River and Clayoquot Arm can be treated to enhance the attainment of Old Forest attributes of spatial diversity, CWD, Wildlife trees, flora diversity with timber benefits of increasing wind firmness and thereby reducing the extensive need to constrain RMZ lands along S1-S3 streams adjacency issues of VQO and recreation can be reduced by extending the spacing strategy debris dependent S5 and S6 streams that drain directly into fish streams.

  PLEASE NOTE: All the above treatments are in accordance with the MWP objectives. Additionally, treatments will meet the objectives of encouraging special habitats alongside riparian areas, while promoting local employment and 1st Nations forest uses.

INPUT PERFORMANCE MEASURES

I entered 1,000 hectares as a target to declare Free to Grow.

To complete the Performance Measures Table I would have used the TFL 44 factors produced by the Type I study. I checked the MOF website for the Type I study for TFL 44; however, there is currently no silviculture strategy for TFL 44 available on that website. Diane Medves advised me to use the MOF regional default measures factors.

Prepared by: Dean McGeough on June 17 (Comments)
Modified by: Cees van Oosten 20 June 2001, after consultations with Dean McGeough. Revised 23 June 2001.

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at
http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** TFL 57

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table
are summarized on the spreadsheet "Management Unit Summary."

TFL 57
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	600	600	600	500	500	33.00	19,800	1
Spacing	0	50	50	50	50	0.00	0	
Pruning	0	0	45	47	0	0.00	0	
Fertilizing	300	300	250	200	100	400.00	120,000	1
Other	0	50	50	50	50	0.00	0	
Totals hectares	900	1000	995	847	700	155.33	139,800	
Planning and prescriptions							7,000	1
Total dollars							146,800	
Forest Health Enhancement								
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	50	50	50	50	50	3,000.00	150,000	1
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	50	50	50	50	50	2,999.94	150,000	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	600	600	600	500	500	33.00	19,800	
Spacing	0	50	50	50	50	0.00	0	
Pruning	0	0	45	47	0	0.00	0	
Fertilizing	300	300	250	200	100	400.00	120,000	
Other stand tending activities	50	100	100	100	100	2,999.76	150000	
Totals hectares	950	950	945	797	650	305.05	289,800	
Planning and prescriptions							7,000	
Studies funding							0	
Total dollars							296,800	

TFL 57
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	2000	750	500	500	500	33.00	66,000	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	300	150	50	50	50	1,155.00	346,500	1
Totals hectares	2300	900	550	550	550	179.35	412,500	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							20,000	1
Total backlog reforestation							432,500	
Impeded areas								
Surveys	100	100	0	0	0	33.00	3,300	2
Brushing	100	50	0	0	0	1,155.00	115,500	2
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	200	150	0	0	0	594.00	118,800	
Prescriptions and planning dollars							4,000	2
Total impeded areas							122,800	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	2100	850	500	500	500	33.00	69300	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	400	200	50	50	50	1,155.00	462000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	2500	1050	550	550	550	212.52	531300	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							24,000	
Recommended studies							0	
Total backlog program							555,300	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

TFL 57
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on Provincial Default Values

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.77	0	0	0	2.9	0.41	0.25	0	0.46	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	
Provincial factors for estimated value gain at harvest							5-15%	15-30%	1-5%	
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	**Nursery Seedling Production**	**Silviculture Surveys**
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	0		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	0		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			600
Total backlog surveys from the backlog table.			2,100
33% of all silviculture surveys			891
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply		(A)	0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			891
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			1,000

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity. 50

TFL 57
Performance Measures Based on Activities Planned for 2002/2003
Based on Provincial Default Values

	Performance Measure	Tree Improve-ment	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	0	0	891	0	0	400	0	0	300	1,641	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	1	10,660	0	0	9,000		19,661
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			1,000								1,000
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	0	0	89	0	0	1,044	0	0	54	164	
3.3	Estimated total full time equivalent positions (FTE)	0	0	0	0	0	6	0	0	0	1	8
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											50
5.3	Est. area with secondary value provided to biodiversity (ha)											50

TFL 57
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	950	950	945	797	650	305	289,800
Planning, prescriptions and seedlings							7,000
Backlog Program Field Activities	2,500	1,050	550	550	550	213	531,300
Planning, prescriptions and seedlings							24,000
Totals	3,450	2,000	1,495	1,347	1,200		852,100

Performance Measures

Potential total merchentable volume increment in 65 years	19,661 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	1,000 ha
Estimated total full time equivalent positions generated	8 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	50 ha
Estimated area with secondary value provided to biodiversity	50 ha

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): TFL 57 Weyerhaeuser

Stand Tending	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	1000	600	-40.0	1	1	33	33	0.0	We anticipate the survey program for 2001-2002 to "catch up' on the immediate survey needs
Spacing	50	n/a	########			1980	n/a	#VALUE!	
Pruning			#DIV/0!			2420	n/a	#VALUE!	
Fertilizing	300	300	0.0	2	1	330	400	21.2	The unit contract cost for the fertilization is $ 400/ha (aerial application) This allows for the application of "non-traditional" mixes, e.g. SCHIRP
Forest Health	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)
Spacing			#DIV/0!			1980	n/a	#VALUE!	
Pruning			#DIV/0!			2420	n/a	#VALUE!	
Habitat Supply/ Biodiversity									
Riparian	50	50	0.0	1	1	3000	3000	0.0	This project was originally listed in the 2001 RMP under Backlog Site Restoration - Rehabilitation at 50 hectares
Non-Riparian			#DIV/0!			3000	n/a	#VALUE!	

2002/03 - 2007/07

SUSTAINABLE HARVEST COMPONENT

OF

THE SQUAMISH FOREST DISTRICT

RESOURCE MANAGEMENT PLAN

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1.0 Basic Data

Area/species profile:

Of the total TSA area, only 299,838 hectares are productive Crown forest. Further reductions applied to the productive forest land base result in 124,312 hectares considered to be available for timber harvesting (HHL, 2000).

Stands with Douglas-fir as the dominant species cover about 51 percent of the THLB, while western hemlock/amabalis fir stands cover 39 percent. Western red cedar, spruce, and cottonwood comprise a small component of the land base (MOF, 1996).

AAC and LRSY

Effective October 1, 2000, the AAC was set at 503,000 cubic meters with a 90,000 cubic meter partition for helicopter logging. The partition for cottonwood-leading forest types was removed in this decision.
The long run sustainable yield is 503,00 m3/yr.

History of treatments:

Fertilization: Approximately 1200 ha/yr from 1988 to 1997.
1998 - 1017 ha; 1999 - 791 ha (heli); 48 ha (tablet); 2000 - 1065 ha

Spacing: average of 1000 ha/yr from 1990 to 1997.
1998 - 307 ha; 1999 - 187 ha; 2000 - 39 ha

Pruning : recent pre 199 level 60 ha/yr
1998 - 76 ha; 1999 - 35 ha; 2000 - 14 ha

1.1 Summary of District (TSA/TFL) Sustainable Harvest RMP Issues

Soo TSA

Issues

Harvest Forecast

The TSR 2 initial, medium-term and long-term harvest level is 503,000 m3/year.

Most of the mature timber upon which timber harvesting will depend in the short-term is located on poor growing sites.

Age Class Structure

There is a relatively high proportion of young stands (less than 40 years of age) within the THLB. However, 41% of the THLB is still in stands over 140 years.

Growing Sites

Approximately 27.5% of the sites in the THLB have a site index @50 greater than 22.5 metres and 41% have a site index between 17.5 and 22.4 metres.

Old Growth Site Index (OGSI) and Site Index Biogeoclimatic Ecological Classification (SIBEC) adjustments were included in the Type 2 incremental silviculture analysis. These adjustments showed significant increases in the harvest forecast in all time periods increasing the short-term harvest level by 19% and the long-term harvest level by 80% from TSR 2.

Quality

Stands of poor quality or low productivity were not included in the timber harvesting land base. TSR 2 netted out 685 ha of non-commercial cover, 22,530 ha of sites with low productivity and 3,166 ha of problem forest types.

Old Forests

Approximately 20% of the THLB is presently older than 250 years and about 34% of the "non-timber harvesting land base" stands are older than 250 years. The harvest forecasts are not sensitive to increasing or decreasing the old seral age requirement by 20 years.

Minimum Harvest Ages (MHA)

Minimum harvest ages are chosen in order to ensure that the timber supply model selects only stands with sufficient merchantable volume and piece size. Timber supply is slightly sensitive to small (10 years) increases or decreases in minimum harvest ages.

Estimates of Existing and Regenerated Stand Volumes

The short-term and mid-term timber supply is somewhat sensitive to increases or decreases in volumes of existing stands.

A 10% increase in managed stand yields allows for an increased harvest forecast in all periods including the initial harvest level. A reduction in managed stand volumes affects only the long-term.

Funding

Adequate funding to complete the recommended level of treatment activities to offset previous AAC reductions is an important issue for the TSA.

Forest Health Issues

No epidemic forest health issues have been identified.

Issues Relating to Habitat and Non-Timber Forest Resources

- Spotted owl - In May 1997, the Provincial Government approved the Spotted Owl Management Plan. This plan relies on twenty-one management areas distributed throughout the range of the spotted owl within the Chilliwack and Squamish Forest Districts. In the Soo TSA, these areas cover 21.3% of the THLB.

- Deer habitat - Black tail deer habitat management to maintain the current population estimated at approximately 7,700.

- Botanical forest products - A small management zone in the Blackwater Creek area has been designated as a reserve for wild mushrooms. Forest cover requirements for this zone are intended to simulate selection harvesting or a slow rate of timber removal to maintain the mushroom habitat.

1.2 District SH data roll up (combined TFL and TSA activities)

Squamish Forest District Roll Up (TFL and TSA Combined)
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Stand Tending								
Surveys	1825	1825	1715	1800	1800	58.33	106447	
Spacing	991	991	991	991	991	1487.09	1473711	
Pruning	208	208	208	208	208	4452.45	927000	
Fertilizing	997	997	997	997	997	300.15	299100	
Other	0	0	0	0	0	0.00	0	
Totals hectares	4021	4021	3911	3996	3996	697.95	2,806,258	
Planning and prescriptions							2,000	
Total dollars							2,808,258	
Forest Health Enhancement								
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	15	0	0	0	0	2,999.80	45000	
Totals hectares	15	0	0	0	0	2,999.40	45,000	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	1825	1825	1715	1800	1800	58.33	106,447	
Spacing	991	991	991	991	991	1,487.09	1,473,711	
Pruning	208	208	208	208	208	4,452.41	927,000	
Fertilizing	997	997	997	997	997	300.15	299,100	
Other stand tending activities	15	0	0	0	0	2,998.80	45000	
Totals hectares	4036	4021	3911	3996	3996	706.51	2,851,258	
Planning and prescriptions							2,000	
Studies funding							0	
Total dollars							2,853,258	

Squamish Forest District Roll Up (TFL and TSA Combined)

Backlog Program Table

For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	400	400	400	400	400	50.00	20000	
Site preparation	0	0	0	0	0	0.00	0	
Planting	30	60	20	20	20	1,199.96	36000	
Brushing	30	30	30	30	30	1,249.96	37500	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	460	490	450	450	450	203.26	93,500	
Seed purchase	30	30	30	30	30	10.00	300	
Total legal obligations							93,800	
Backlog Reforestation								
Surveys	500	500	500	400	400	49.00	24500	
Site preparation	25	100	0	0	0	699.97	17500	
Planting	65	155	35	35	35	1,015.38	66000	
Brushing	110	110	110	100	100	1,222.73	134500	
Totals hectares	700	865	645	535	535	346.43	242,500	
Seed purchase	50	50	50	50	50	10.00	500	
Prescriptions and planning dollars							2,000	
Total backlog reforestation							245,000	
Impeded areas								
Surveys	900	900	900	900	900	70.00	63000	
Brushing	100	100	100	100	100	1,249.99	125000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1000	1000	1000	1000	1000	188.00	188,000	
Prescriptions and planning dollars							0	
Total impeded areas							188,000	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	1800	1800	1800	1700	1700	59.72	107500	
Site preparation	25	100	0	0	0	699.89	17500	
Planting	95	215	55	55	55	1,073.65	102000	
Brushing	240	240	240	230	230	1,237.49	297000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	2160	2355	2095	1985	1985	242.59	524000	
Seed purchase	80	80	80	80	80	10.00	800	
Prescriptions and planning							2,000	
Recommended studies							0	
Total backlog program							526,800	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

2.0 - SOO TSA

2.1 Summary of Soo TSA Silviculture Strategy from Type 2 Analysis

Management Objectives

Objective	Objective description
Maximize volume	- Fibre - Sawlog; average dbh 40 cm
Increase productive land base	- Reduce backlog NSR - Deciduous stand conversion - Lodgepole pine stands - create new markets and convert to Fd stands
Employment	- Create stable full time jobs
Produce clear wood	- High quality peeler logs - Premium sawlog; average dbh 50 cm
Produce owl habitat	- Create multi layer Fd stands - Pruning for habitat - Harvest opportunities to create habitat
Other values	- Recreation/visuals - Wildlife - Fisheries - Water - Alternate bioresources (mushrooms) - First Nations/archaeological

Strategic Objectives and Targets

Short- and medium-term

- Increase current harvest level by 5% by increasing the THLB and by increasing volumes in managed stands.
- Create a timber supply capable of supporting a minimum harvest level of at least 5% increase over the base case.

Long-term

- Create a timber supply capable of supporting a harvest level of at least 10% increase over the base case.
- Generate at least 10% of total harvest volume in premium large logs.

Strategies

The following strategies support the achievement of the objectives and targets

1. Increase regenerated stand volumes by using genetically improved seed and fertilizing suitable regenerated stands.
2. Expand the timber harvesting land base through deciduous conversion.
3. Space and fertilize to set up stands for future commercial thinning; maintain options for the future.
4. Increase the value of second growth stands by spacing, pruning and fertilization.
5. Produce Spotted Owl habitat by creating multi-layered Fd stands through spacing, commercial thinning and partial harvesting.

Scenarios

Several scenarios were developed and tested. One of them was the silviculture strategy base case, against which the potential candidates for the preferred scenario were compared. The preferred scenario is the scenario that this strategy is based on.

Several scenarios concentrated on increasing the long and short-term timber supply through incremental silviculture. Investigating the results of the volume-orientated scenarios with the goal of combining the volume and value objectives helped develop the preferred scenario.

Therefore, a strategy was developed that would produce more value while maintaining high harvest levels. This was done by including a value weighting in the estate model optimization function. It was assumed that including the value in the optimization function would schedule more treatments focusing on value, thus increasing the average piece size and overall quality of the future timber flow. According to the analysis, adopting an incremental silviculture strategy as per the preferred scenario could produce the following results:

- A short-term increase of 3%, and a long-term increase of 6% on harvest levels.
- Approximately 50% of the harvested managed Fir volume is projected to have an average diameter greater than 50 cm over most of the planning horizon. For other species, this number is close to 40%.
- Over the planning horizon of 200 years, an average of about 20 hectares of pruning is proposed annually. On average, the clear wood volume will be about 0.6% of total harvest volume throughout the planning horizon. The production of clear wood will not start until the fifth decade.
- 20 silviculture jobs for the next 10 years.
- A short-term increase of 125 TSA level jobs and 259 provincial jobs. A long-term increase of 296 TSA level jobs and 614 provincial jobs.

Incremental Silviculture Program

The following table itemizes the annual treatments in hectares and identifies the annual costs of the program needed to support the incremental silviculture strategy. The budget assumes no net cost for commercial thinning.

DECADE	CT1	CT1/FERT	CT2[1]	FERT	SPACE/ PRUNE1	FERT/PRUNE2	PRUNE2	SPACE/FERT	SPACE	GRAND TOTAL	BUDGET
1	0.9	7.4	0.0	528.2	12.7	9.2	6.3	411.7	416.8	1393.2	$1,259,877
2	116.0	37.6	0.0	923.2	11.8	6.5	6.1	144.7	269.5	1515.4	$742,408
3	227.2	84.3	0.0	1001.7	0.8	6.7	5.1	269.7	286.2	1881.7	$779,028
4	221.4	88.4	0.0	1253.9	3.2	0.4	0.4	187.8	222.4	1978.0	$608,553
5	219.7	119.5	42.6	1235.6	7.9	0.8	2.5	227.4	187.0	2042.8	$632,907
6	227.6	129.8	77.2	1130.5	18.5	6.0	1.9	202.5	194.4	1988.5	$629,436
7	330.1	99.9	107.3	949.8	12.8	7.4	11.2	160.4	170.1	1849.0	$567,045
8	327.9	85.9	95.4	982.9	8.8	6.7	6.2	86.9	169.8	1770.4	$491,153
9	250.9	106.1	57.1	779.3	9.6	3.2	5.6	112.1	240.7	1564.7	$549,477
10	286.0	75.6	76.2	737.0	7.5	7.4	2.2	127.9	319.9	1639.7	$599,525
11	189.1	44.1	44.0	674.4	14.9	6.2	1.3	135.9	379.1	1489.0	$711,666
12	151.1	78.0	115.8	573.5	11.5	5.1	9.8	164.0	378.5	1487.4	$740,534
13	194.4	58.8	89.9	594.4	9.3	6.1	5.4	180.4	403.2	1541.9	$742,121
14	263.6	83.6	99.0	662.6	8.3	1.7	7.6	181.4	295.9	1603.7	$632,386
15	290.0	111.5	69.9	703.8	7.5	5.3	3.0	131.5	297.2	1619.7	$577,759
16	302.5	103.5	150.7	708.6	12.4	4.4	3.1	174.3	266.0	1725.5	$617,384
17	305.5	106.0	154.3	746.5	16.7	6.8	5.6	126.2	253.5	1721.0	$609,451
18	265.2	85.2	202.5	728.6	5.1	9.4	7.3	101.2	168.1	1572.5	$447,021
19	327.8	90.0	196.9	651.3	20.2	2.9	2.1	102.8	249.6	1643.6	$545,680
20	273.3	88.3	158.8	576.2	16.0	8.0	12.2	119.2	275.7	1527.7	$610,610

Incremental Silviculture Program, First Decade

Spacing

Spacing treatments consisted of spacing only, a combination treatment with fertilization and a combination treatment with pruning. Several spacing densities were modelled. The following table illustrates the densities and combination treatments that the strategy proposes, in detail. It also shows the sites (by SI class) where specific treatments regimes are recommended and the annual treatments areas.

	Ba		Cw		Fd			Hw		S		Grand
Treatment	SI 25	SI 30	SI 22	SI 28	SI 23	SI 29	SI 33	SI 25	SI 30	SI 22	SI 28	Total
Space to 500 sph					5.8							5.8
Space to 600 sph						3.6	14.8					18.4
Space to 700sph										18.7		18.7
Space to 800 sph			21.1					3.4	27.1			51.6
Space to 900 sph	50.8			9.1								60.0
Space to 1000 sph		95.5										95.5
Space to 500 sph and 1st prune							6.1					6.1
Space to 500 sph and 1st prune (fert. To come)							6.5					6.5
2nd prune							6.3					6.3
Space to 500 sph and fertilize					59.1							59.1
Space to 600 sph and fertilize						31.3	50.7					82.0
Space to 900 sph and fertilize	134.0											134.0
Space to 650 sph and fertilize (1 CT to come)					30.2							30.2
Space to 750 sph and fertilize (1 CT to come)						11.1						11.1
Space to 800 sph and fertilize (1 CT to come)							46.2					46.2
Space to 1200 sph and fertilize (2 CTs to come)					42.5	6.5						49.1
2nd prune and fertilize							9.2					9.2
Fertilize	49.6				158.5	126.6	193.5					528.2
Space to 650 sph (1 CT to come)					5.1							5.1
Space to 750 sph (1 CT to come)						5.7						5.7
Space to 800 sph (1 CT to come)							8.0	0.4				8.5
Space to 1000 sph (1 CT to come)				9.5				11.1	7.0			27.6
Space to 1200 sph (2 CTs to come)					21.8	16.2	81.9					119.9
Total	234.4	95.5	21.1	18.6	323.0	200.9	423.3	14.9	34.0	18.7	0.0	1384.5

Different combinations of spacing amount to 841 ha for the first decade. 63.9% (538 ha) of spacing consists of treatments where no commercial thinning is anticipated in the future. The remaining 36.1% (303 ha) of spacing treatments set the stands up for future commercial thinning.

- ***Spacing:*** A High site Fir, poor site Fir and high site Balsam all have approximately 25% share of proposed spacing. Only 11.7% of spacing is proposed in Hemlock stands (8.2% high site, 3.6% poor site)

- ***Space/Fertilize:*** The treatment area is allocated for medium site (SI=25) Balsam (33%), poor site (SI=23) Fir (32%), medium site (SI=29) Fir (12%) and high site Fir (24%). It should be recognized that due to the SI adjustments, the poor site classifications represent better site conditions.

- ***Space/Prune, 1st lift:*** Only high site Fir stands are eligible for this treatment regime, which combines spacing and pruning. Only 12.6 ha are proposed annually for the first decade.

Fertilization

This treatment may be used a stand-alone treatment but it is also used together with spacing, pruning, already discussed above, and commercial thinning.

- ***Fertilization:*** The proposed treatment area for stand-alone fertilization is almost equally divided between the three Fir site types, (each receiving 30%) with the remaining 10% allocated to medium site Balsam stands.

- ***Commercial thinning with fertilization (not shown in the table):*** Only 7.4 hectares per year are proposed for the first decade. Only Fir stands were eligible for this treatment. Approximately 88% of this treatment is proposed for the high site Fir stands (SI=33).

- ***Fertilize/Prune 2nd lift:*** Only 9.2 hectares are proposed annually for the first decade. As this is an expensive treatment it is only eligible in high site Fir.

Commercial Thinning

This is also a combination treatment and can be combined with fertilization. Commercial thinning with fertilization has already been discussed above.

- ***Commercial Thinning (not shown in the table):*** Only 0.9 hectares of stand-alone commercial thinning are proposed annually for the whole decade. This is due to a lack of eligible stands available for commercial thinning. Commercial thinning increases significantly throughout the planning horizon.

Pruning

Pruning is also a combination treatment and the only stand-alone regime is the second lift pruning. Pruning in combination with fertilization and spacing has already been discussed above.

Prune 2nd lift: Only the high site Fir stands that had already received a first pruning lift (in the past according to the history records or subsequently scheduled) are eligible for a 2nd lift treatment. A total of 6.3 hectares annually are proposed over the next ten years.

All Treatments

- Most treatments occur on Fir sites, however, a significant area of Balsam (SI=25) is spaced and fertilized.

- For the next 10 years, the recommended annual treatment areas are 8 hectares of commercial thinning, 841 hectares of spacing, 957 hectares of fertilization, and 28 hectares pruning.
  For the first 20 years, treatments are relatively evenly distributed across the TSA.

Resource Values

Non-timber resource values have a significant influence on the management of forested land and as such, must be considered in all resource analysis projects. Accounting for non-timber values as a locally derived objective for the Soo TSA, was considered within the Type 2 analysis by removing deer reserves from the land base, establishing seral distribution targets for each BEC variant within each landscape unit in the TSA, and establishing VQO requirements within visually sensitive areas. The spotted owl cover constraints were modeled as per TSR II and the required conditions were met for all scenarios, ensuring that non-timber resources are adequately considered when analyzing potential strategic silviculture schedules.

Deer winter range, moose habitat could possibly be improved by late spacing and pruning in the backlog area by opening up the stand and increasing available forage. The sustainable harvest plan includes 15 hectares of non riparian management. Proceeding with this program is dependent on the Ministry of Environment identifying the treatment areas and agreement with licensees to undertake the proposed project.

Type 2 Silviculture Strategy

The completed Type 2 silviculture strategy document document is located at: http://www.for.gov.bc.ca/hfp/silstrat/map/vancouver-tsa.htm.

2.1 Soo TSA - SH Data Template

Squamish Forest District Soo TSA

Enhanced Forestry Table

For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1700	1700	1700	1700	1700	60.41	102697	2
Spacing	841	841	841	841	841	1324.27	1113711	2
Pruning	28	28	28	28	28	2234.04	63000	3
Fertilizing	957	957	957	957	957	300.16	287100	1
Other	0	0	0	0	0	#DIV/0!	0	
Totals hectares	3526	3526	3526	3526	3526	444.31	1,566,508	
Planning and prescriptions							0	
Total dollars							1,566,508	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	0	0	0	0	0	#DIV/0!		
Non-riparian treatments	15	0	0	0	0	3,000.00	45000	3
Totals hectares	15	0	0	0	0	3,000.00	45,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	1700	1700	1700	1700	1700	60.41	102,697	
Spacing	841	841	841	841	841	1,324.27	1,113,711	
Pruning	28	28	28	28	28	2,233.96	63,000	
Fertilizing	957	957	957	957	957	300.16	287,100	
Other stand tending activities	15	0	0	0	0	2,999.60	45000	
Totals hectares	3541	3526	3526	3526	3526	455.14	1,611,508	
Planning and prescriptions							0	
Studies funding							0	
Total dollars							1,611,508	

Squamish Forest District Soo TSA

Backlog Program Table

For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	400	400	400	400	400	50.00	20000	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	30	60	20	20	20	1,200.00	36000	1
Brushing	30	30	30	30	30	1,250.00	37500	1
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	460	550	430	430	430	203.26	93,500	
Seed purchase	30	30	30	30	30	10.00	300	
Total legal obligations							93,800	
Backlog Reforestation								
Surveys	300	300	300	300	300	60.00	18000	1
Site preparation	25	100	0	0	0	700.00	17500	1
Planting	50	140	20	20	20	1,200.00	60000	1
Brushing	50	50	50	50	50	1,250.00	62500	1
Totals hectares	425	650	350	350	350	371.76	158,000	
Seed purchase	50	50	50	50	50	10.00	500	1
Prescriptions and planning dollars							0	
Total backlog reforestation							158,500	
Impeded areas								
Surveys	900	900	900	900	900	70.00	63000	1
Brushing	100	100	100	100	100	1,250.00	125000	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1000	1000	1000	1000	1000	188.00	188,000	
Prescriptions and planning dollars							0	
Total impeded areas							188,000	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	1600	1600	1600	1600	1600	63.13	101000	
Site preparation	25	100	0	0	0	699.94	17500	
Planting	80	320	0	0	0	1,199.97	96000	
Brushing	180	180	180	180	180	1,250.00	225000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1885	2200	1780	1780	1780	233.16	439500	
Seed purchase	80	80	80	80	80	10.00	800	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							440,300	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

2.3 Communication Log

Agency: MoF DSQ District

TSA: Soo TSA

Communication Log for the Sustainable Harvest Objective 2002-2003
(also include community/stakeholder meetings to review silviculture strategies and SH plans)

Date	*Name (person contacted)*	*Representing*	*Communication Method*	*Comments/Issues*
2001/05/08	TSA licensees	TSA licensees	email	requested input on Type 2 analysis and recommended activity levels/unit costs/priority ranking.

2.4 Soo TSA plan comparison Table/explanation sheet

Table A: SH Plan Comparison - Enhanced Forestry
Soo TSA:

Stand Tending	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % from plans or exceeds cost target**
Surveys	2400	1700	-29.2	2	2	33	60	81.8	ha reduced in line with Type 2 analysis recommendatio costs higher as prescriptions included
Spacing	1200	841	-29.9	2	20	1980	1324	-33.1	ha reduced in line with Type 2 analysis recommendations
Pruning	150	28	-81.3	3	30	2420	2234	-7.7	ha reduced in line with Type 2 analysis recommendations
Fertilizing	1400	957	-31.6	1	1	330	300	-9.1	ha reduced in line with Type 2 analysis recommendations
Forest Health	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % plans or exceeds cost target**
Spacing	0	0	0	0	0	1980	n/a	n/a	
Pruning	0	0	0	0	0	2420	n/a	n/a	
Habitat Supply/ Biodiversity									
Riparian	0	0	0	0	0	3000	n/a	n/a	
Non-Riparian	14	15	7.1	3	0	3000	3000	0.0	

Table A: SH Plan Comparison - Backlog Program

Soo TSA:

Legal Obligation	Last Year's 2002/ 2003 ha	This Year's 2002/ 2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/ 2003 $/ha	% difference	Reasons for Variation Greater than 15 % from plans or exceeds Cost Targets
Surveys	400	400	0	1	1	33	50	51.5	costs higher due to access
Site preparation	0	0	0	0	0	1650	n/a	n/a	
Planting	30	30	0	1	1	1320	1200	-9.1	
Brushing	30	30	0	1	1	1155	1250	8.2	
B/L Reforestation									
Surveys	300	300	0	1	1	33	60	81.8	costs higher due to access/prescriptions
Site Prep	25	25	0	1	1	1650	700	-57.6	
Planting	50	50	0	1	1	1320	1200	-9.1	
Brushing	50	50	0	1	1	1155	1250	8.2	

Impeded	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/ 2003 $/ha	% difference	Reasons for Variation Greater than 15 % from Plans or exceeds Cost Target
Surveys	900	900	0	1	1	33	70	112.1	costs higher due to access
brushing	100	100	0	1	1	1155	1250	8.2	
Site Resoration									
Fill planting	0	0	0	0	0	1320	n/a	n/a	
Rehab	0	0	0	0	0	2200	n/a	n/a	
Reforestatio	0	0	0	0	0	1320	n/a	n/a	

Proposed TSA studies

None proposed.

2.6 TSA SH RMP submission evaluation

Evaluation Rating of TSA SOO Sustainable Harvest RMP

Category	**yes**	**partly**	**no**	**Rating (H, M, L)**
Submitted by June 27 (TFL) or July 16 (TSA).	V			H
Basic data for TFL provided, area, current AAC, current harvest forecast, site/age class species profile. Long Run Sustainable Yield stated.	V			H
History of past treatments provided.**(not by year)**		V		M
Text submitted identifying backlog and enhanced forestry program issues.	V			H
Opportunities to increase timber supply addressed in text, e.g. short/mid/long-term, timber flow benefits. Consistent with Type 1 or 2 Analysis.	V			H
Opportunities to increase timber value addressed in text, if none so stated. Consistent with Type 1 or 2 Analysis.	V			H
Opportunities to increase habitat supply/biodiversity addressed in text, if none so stated. Consistent with Type 1 or 2 Analysis.	V			H
Working targets proposed for volume/value/(**no habitat target**).		V		M
Satisfactory treatment regime table provided.	V			H
Satisfactory rationale provided for the priority ranking of activities i.e. link to MP ,TSR, other . Consistent with Type 1 or 2 Analysis.	V			H
Where habitat supply/biodiversity activity indicated, rationale on why the silviculture treatment specifically maintains the non-timber values.	V			H
All summary tables submitted satisfactorily.	V			H
Projected job outcome of proposed program stated.	V			H
Opportunities to achieve FRBC performance goals Is program within reasonable range of last year's SH RMP projections for year 2002/03. Plan Comparison Table submitted with explanation for variations.	V			H
Performance measures,…where TFL used local factors supporting rationale provided.	N/A			
SH study form completed satisfactorily	N/A			
Communication log documents partnership group and stakeholder **discussions and issues.**		V		M
Other (describe)				
Overall rating	n/a	n/a	n/a	H

3.0 - TFL 38

3.1 TFL 38 SH Data Template

TFL 38

Enhanced Forestry Table

For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	125	125	15	100	100	30.00	3750	2
Spacing	150	150	150	150	150	2400.00	360000	1
Pruning	180	180	180	180	180	4800.00	864000	1
Fertilizing	40	40	40	40	40	300.00	12000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	495	495	385	470	470	2504.54	1,239,750	
Planning and prescriptions							2,000	1
Total dollars							1,241,750	
Forest Health Enhancement								
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	125	125	15	100	100	30.00	3,750	
Spacing	150	150	150	150	150	2,399.98	360,000	
Pruning	180	180	180	180	180	4,799.97	864,000	
Fertilizing	40	40	40	40	40	300.00	12,000	
Other stand tending activities	0	0	0	0	0	0.00	0	
Totals hectares	495	495	385	470	470	2,504.51	1,239,750	
Planning and prescriptions							2,000	
Studies funding							0	
Total dollars							1,241,750	

TFL 38

Backlog Program Table

For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	200	200	200	100	100	33.00	6500	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	15	15	15	15	15	400.00	6000	1
Brushing	60	60	60	50	50	1,200.00	72000	1
Totals hectares	275	275	275	165	165	307.27	84,500	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							2,000	
Total backlog reforestation							86,500	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	200	200	200	100	100	32.50	6500	
Site preparation	0	0	0	0	0	0.00	0	
Planting	15	15	15	15	15	399.92	6000	
Brushing	60	60	60	50	50	1,199.96	72000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	275	275	275	165	165	307.26	84500	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							2,000	
Recommended studies							0	
Total backlog program							86,500	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

3.2 TFL 38 plan comparison Table/explanation sheet

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): TFL 38

Stand Tending	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % from plans or Cost Tar
Surveys	125	125	0.0	3	2	33	30	-9.1	
Spacing	65	150	130.8	1	1	1980	2400	21.2	
Pruning	50	180	260.0	2	1	2420	4800	98.3	
Fertilizing	0	40	#DIV/0!	0	1	330	300	-9.1	
Forest Health	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % from plans or Cost targ
Spacing	0	0	#DIV/0!	0	0	1980	n/a	#VALUE!	
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Habitat Supply/ Biodiversity									
Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	
Non-Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): TFL 38

Legal Obligation	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Great 15 % from plan or Cost Target
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site preparation	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
B/L Reforestation									
Surveys	75	200	166.6667	3	1	33	33	0.0	
Site Prep	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	10	15	50	1	1	1320	400	-69.7	
Brushing	50	60	20	1	1	1155	1200	3.9	

Impeded	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Great 15 % from Plans or Cost Target
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
Site Resoration									
Fill planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Rehab	0	0	#DIV/0!	0	0	2200	n/a	#VALUE!	
Reforestation	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** Squamish Forest District SUM TSA & TSA

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

1/4/2006

Squamish Forest District SUM TSA & TSA
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1825	1825	1715	1800	1800	58.33	106447	
Spacing	991	991	991	991	991	1487.09	1473711	
Pruning	208	208	208	208	208	4452.45	927000	
Fertilizing	997	997	997	997	997	300.15	299100	
Other	0	0	0	0	0	0.00	0	
Totals hectares	4021	4021	3911	3996	3996	697.95	2,806,258	
Planning and prescriptions							2,000	
Total dollars							2,808,258	

Forest Health Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	15	0	0	0	0	2,999.80	45000	
Totals hectares	15	0	0	0	0	2,999.40	45,000	

Domestic Range

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1825	1825	1715	1800	1800	58.33	106,447	
Spacing	991	991	991	991	991	1,487.09	1,473,711	
Pruning	208	208	208	208	208	4,452.41	927,000	
Fertilizing	997	997	997	997	997	300.15	299,100	
Other stand tending activities	15	0	0	0	0	2,998.80	45000	
Totals hectares	4036	4021	3911	3996	3996	706.51	2,851,258	
Planning and prescriptions							2,000	
Studies funding							0	
Total dollars							2,853,258	

Squamish Forest District Soo TSA
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Stand Tending								
Surveys	1700	1700	1700	1700	1700	60.41	102697	2
Spacing	841	841	841	841	841	1324.27	1113711	2
Pruning	28	28	28	28	28	2234.04	63000	3
Fertilizing	957	957	957	957	957	300.16	287100	1
Other	0	0	0	0	0	#DIV/0!	0	
Totals hectares	3526	3526	3526	3526	3526	444.31	1,566,508	
Planning and prescriptions							0	
Total dollars							1,566,508	
Forest Health Enhancement								
Spacing	0	0	0	0	0	#DIV/0!	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments		0	0	0	0	#DIV/0!		
Totals hectares	0	0	0	0	0	0.00	0	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	15	0	0	0	0	3,000.00	45000	3
Totals hectares	15	0	0	0	0	2,999.80	45,000	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	1700	1700	1700	1700	1700	60.41	102,697	
Spacing	841	841	841	841	841	1,324.27	1,113,711	
Pruning	28	28	28	28	28	2,233.96	63,000	
Fertilizing	957	957	957	957	957	300.16	287,100	
Other stand tending activities	15	0	0	0	0	2,999.60	45000	
Totals hectares	3541	3526	3526	3526	3526	455.14	1,611,508	
Planning and prescriptions							0	
Studies funding							0	
Total dollars							1,611,508	

TFL 38
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	125	125	15	100	100	30.00	3750	2
Spacing	150	150	150	150	150	2400.00	360000	1
Pruning	180	180	180	180	180	4800.00	864000	1
Fertilizing	40	40	40	40	40	300.00	12000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	495	495	385	470	470	2504.54	1,239,750	
Planning and prescriptions							2,000	1
Total dollars							1,241,750	
Forest Health Enhancement								
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	125	125	15	100	100	30.00	3,750	
Spacing	150	150	150	150	150	2,399.98	360,000	
Pruning	180	180	180	180	180	4,799.97	864,000	
Fertilizing	40	40	40	40	40	300.00	12,000	
Other stand tending activities	0	0	0	0	0	0.00	0	
Totals hectares	495	495	385	470	470	2,504.51	1,239,750	
Planning and prescriptions							2,000	
Studies funding							0	
Total dollars							1,241,750	

Squamish Forest District SUM TSA & TSA
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	400	400	400	400	400	50.00	20000	
Site preparation	0	0	0	0	0	0.00	0	
Planting	30	60	20	20	20	1,199.96	36000	
Brushing	30	30	30	30	30	1,249.96	37500	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	460	490	450	450	450	203.26	93,500	
Seed purchase	30	30	30	30	30	10.00	300	
Total legal obligations							93,800	
Backlog Reforestation								
Surveys	500	500	500	400	400	49.00	24500	
Site preparation	25	100	0	0	0	699.97	17500	
Planting	65	155	35	35	35	1,015.38	66000	
Brushing	110	110	110	100	100	1,222.73	134500	
Totals hectares	700	865	645	535	535	346.43	242,500	
Seed purchase	50	50	50	50	50	10.00	500	
Prescriptions and planning dollars							2,000	
Total backlog reforestation							245,000	
Impeded areas								
Surveys	900	900	900	900	900	70.00	63000	
Brushing	100	100	100	100	100	1,249.99	125000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1000	1000	1000	1000	1000	188.00	188,000	
Prescriptions and planning dollars							0	
Total impeded areas							188,000	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	1800	1800	1800	1700	1700	59.72	107500	
Site preparation	25	100	0	0	0	699.89	17500	
Planting	95	215	55	55	55	1,073.65	102000	
Brushing	240	240	240	230	230	1,237.49	297000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	2160	2355	2095	1985	1985	242.59	524000	
Seed purchase	80	80	80	80	80	10.00	800	
Prescriptions and planning							2,000	
Recommended studies							0	
Total backlog program							526,800	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Squamish Forest District Soo TSA
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	400	400	400	400	400	50.00	20000	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	30	60	20	20	20	1,200.00	36000	1
Brushing	30	30	30	30	30	1,250.00	37500	1
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	460	490	450	450	450	203.26	93,500	
Seed purchase	30	30	30	30	30	10.00	300	1
Total legal obligations							93,800	
Backlog Reforestation								
Surveys	300	300	300	300	300	60.00	18000	1
Site preparation	25	100	0	0	0	700.00	17500	1
Planting	50	140	20	20	20	1,200.00	60000	1
Brushing	50	50	50	50	50	1,250.00	62500	1
Totals hectares	425	590	370	370	370	371.76	158,000	
Seed purchase	50	50	50	50	50	10.00	500	1
Prescriptions and planning dollars							0	
Total backlog reforestation							158,500	
Impeded areas								
Surveys	900	900	900	900	900	70.00	63000	1
Brushing	100	100	100	100	100	1,250.00	125000	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1000	1000	1000	1000	1000	188.00	188,000	
Prescriptions and planning dollars							0	
Total impeded areas							188,000	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	1600	1600	1600	1600	1600	63.13	101000	
Site preparation	25	100	0	0	0	699.94	17500	
Planting	80	200	40	40	40	1,199.97	96000	
Brushing	180	180	180	180	180	1,250.00	225000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1885	2080	1820	1820	1820	233.16	439500	
Seed purchase	80	80	80	80	80	10.00	800	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							440,300	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

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TFL 38
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Legal Obligations								
Surveys	0	0	0	0	0	#DIV/0!	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	200	200	200	100	100	33.00	6500	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	15	15	15	15	15	400.00	6000	1
Brushing	60	60	60	50	50	1,200.00	72000	1
Totals hectares	275	275	275	165	165	307.27	84,500	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							2,000	
Total backlog reforestation							86,500	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	200	200	200	100	100	32.50	6500	
Site preparation	0	0	0	0	0	0.00	0	
Planting	15	15	15	15	15	399.92	6000	
Brushing	60	60	60	50	50	1,199.96	72000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	275	275	275	165	165	307.26	84500	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							2,000	
Recommended studies							0	
Total backlog program							86,500	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

1/4/2006

Squamish Forest District SUM TSA & TSA
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

	Tree Improve-ment	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.77	0	0	0	2.9	0.41	0.25	0	0.46	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	
Provincial factors for estimated value gain at harvest							5-15%	15-30%	1-5%	
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improve-ment	**Nursery Seedling Production**	**Silviculture Surveys**
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	95		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	95		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			1,825
Total backlog surveys from the backlog table.			1,800
33% of all silviculture surveys			1,196
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply			(A) 0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			1,196
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity. ☐

Squamish Forest District SUM TSA & TSA
Performance Measures Based on Activities Planned for 2002/2003
Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improve-ment	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	95	0	1,196	25	95	240	991	208	997	3,862	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	18,155	6,396	16,104	0	29,895		70,550
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								0
1.5	Est. area that will be declared as free growing (ha)			0								0
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	10	0	120	24	190	626	3,924	945	179	386	
3.3	Estimated total full time equivalent positions (FTE)	0	0	1	0	1	3	22	5	1	2	36
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											15
5.3	Est. area with secondary value provided to biodiversity (ha)											0

Squamish Forest District SUM TSA & TSA
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	4,036	4,021	3,911	3,996	3,996	707	2,851,258
Planning, prescriptions and seedlings							2,000
Backlog Program Field Activities	2,160	2,355	2,095	1,985	1,985	243	524,000
Planning, prescriptions and seedlings							2,800
Totals	6,196	6,376	6,006	5,981	5,981		3,380,058

Performance Measures

Potential total merchentable volume increment in 65 years	70,550 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	36 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	15 ha
Estimated area with secondary value provided to biodiversity	0 ha

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement. The template design allows completion in a consistent format for all management units across the province. Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** Squamish Forest District Soo TSA

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

Squamish Forest District Soo TSA
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	1700	1700	1700	1700	1700	60.41	102697	2
Spacing	841	841	841	841	841	1324.27	1113711	2
Pruning	28	28	28	28	28	2234.04	63000	3
Fertilizing	957	957	957	957	957	300.16	287100	1
Other	0	0	0	0	0	#DIV/0!	0	
Totals hectares	3526	3526	3526	3526	3526	444.31	1,566,508	
Planning and prescriptions							0	
Total dollars							1,566,508	

Forest Health Enhancement

Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	

Habitat Supply and Biodiversity Enhancement

Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	15	0	0	0	0	3,000.00	45000	
Totals hectares	15	0	0	0	0	2,999.80	45,000	

Domestic Range

Treatments	0	0	0	0	0	0.00	0	

Enhanced Forestry Activities - Management Unit Total

Surveys	1700	1700	1700	1700	1700	60.41	102,697	
Spacing	841	841	841	841	841	1,324.27	1,113,711	
Pruning	28	28	28	28	28	2,233.96	63,000	
Fertilizing	957	957	957	957	957	300.16	287,100	
Other stand tending activities	15	0	0	0	0	2,999.40	45000	
Totals hectares	3541	3526	3526	3526	3526	455.14	1,611,508	
Planning and prescriptions							0	
Studies funding							0	
Total dollars							1,611,508	

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Squamish Forest District Soo TSA
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	Treatment Area Goals (ha)					Plan 2002/03		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	400	400	400	400	400	50.00	20000	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	30	60	20	20	20	1,200.00	36000	1
Brushing	30	30	30	30	30	1,250.00	37500	1
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	460	490	450	450	450	203.26	93,500	
Seed purchase	30	30	30	30	30	10.00	300	1
Total legal obligations							93,800	
Backlog Reforestation								
Surveys	300	300	300	300	300	60.00	18000	1
Site preparation	25	100	0	0	0	700.00	17500	1
Planting	50	140	20	20	20	1,200.00	60000	1
Brushing	50	50	50	50	50	1,250.00	62500	1
Totals hectares	425	590	370	370	370	371.76	158,000	
Seed purchase	50	50	50	50	50	10.00	500	1
Prescriptions and planning dollars							0	
Total backlog reforestation							158,500	
Impeded areas								
Surveys	900	900	900	900	900	70.00	63000	1
Brushing	100	100	100	100	100	1,250.00	125000	1
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1000	1000	1000	1000	1000	188.00	188,000	
Prescriptions and planning dollars							0	
Total impeded areas							188,000	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	1600	1600	1600	1600	1600	63.13	101000	
Site preparation	25	100	0	0	0	699.94	17500	
Planting	80	200	40	40	40	1,199.97	96000	
Brushing	180	180	180	180	180	1,250.00	225000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	1885	2080	1820	1820	1820	233.16	439500	
Seed purchase	80	80	80	80	80	10.00	800	
Prescriptions and planning							0	
Recommended studies							0	
Total backlog program							440,300	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

Squamish Forest District Soo TSA
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
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Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.

The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

Potential volume/ha gain (m3/ha/yr) provincial factors:

0.77	0	0	0	2.9	0.41	0.25	0	0.46

Years the factor will affect:

0	65	65	65	65	65	65	65	65

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.
Provincial factors for estimated value gain at harvest

5-15%	15-30%	1-5%

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.
Est. short term employment rate (person days/ha) provincial factors:

0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

Area affected by tree improvement, seedling production and silviculture surveys

Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

Area		
Tree Improvement	Nursery Seedling Production	Silviculture Surveys

A Tree Improvement
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003

Backlog area planted from backlog table	80
Enter area of all other sites planted with improved trees	
Total area affected by tree improvement	80

B Nursery production of seedlings
Enter sowing requests from SPAR

C Silviculture surveys
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.
These potentially provide improved estimates of site productivity and operational yield adjustment factors

Total EFP surveys from the EFP table	1,700
Total backlog surveys from the backlog table.	1,600
33% of all silviculture surveys	1,089

Optionally, you may provide a more exact estimate:

Estimate area of regen delay surveys	
Estimate area of free growing surveys	
Estimate area of pre-stand tending surveys	
Estimate of total surveys that will affect timber supply	(A) 0

Surveyed area that will affect timber supply 1,089
Replace with (A) if a more exact estimate is calculated

Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR)
Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003

Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas)
Estimate area that will be classified as free growing after a survey in 2002/2003

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity.

Squamish Forest District Soo TSA
Performance Measures Based on Activities Planned for 2002/2003
Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	80	0	1,089	25	80	180	841	28	957	3,295	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	15,288	4,797	13,666	0	28,695		**62,447**
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			0								**0**
1.5	Est. area that will be declared as free growing (ha)			0								**0**
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	8	0	109	24	160	470	3,330	128	172	329	
3.3	Estimated total full time equivalent positions (FTE)	0	0	1	0	1	3	19	1	1	2	**26**
4.1	**Forest Health Enhancement (ha)**											**0**
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											**15**
5.3	Est. area with secondary value provided to biodiversity (ha)											**0**

Squamish Forest District Soo TSA
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities							
Planning, prescriptions and seedlings	3,541	3,526	3,526	3,526	3,526	455	1,611,508
							0
Backlog Program Field Activities							
Planning, prescriptions and seedlings	1,885	2,080	1,820	1,820	1,820	233	439,500
							800
Totals	5,426	5,606	5,346	5,346	5,346		2,051,808

Performance Measures

Potential total merchentable volume increment in 65 years	62,447 m^3
Estimated ha that will be reclassified as stocked	0 ha
Estimated ha that will be declared as free growing	0 ha
Estimated total full time equivalent positions generated	26 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	15 ha
Estimated area with secondary value provided to biodiversity	0 ha

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): Soo TSA

Stand Tending	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	2400	1700	-29.2	2	2	33	60	81.8	ha reduced in line with Type 2 analysis recommendations; costs higher as includes prescriptions
Spacing	1200	841	-29.9	2	0	1980	1324	-33.1	ha reduced in line with Type 2 analysis recommendations
Pruning	150	28	-81.3	3	0	2420	2234	-7.7	ha reduced in line with Type 2 analysis recommendations
Fertilizing	1400	957	-31.6	1	0	330	300	-9.1	ha reduced in line with Type 2 analysis recommendations

Forest Health	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)
Spacing	0	0	#DIV/0!	0	0	1980	n/a	#VALUE!	
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Habitat Supply/ Biodiversity									
Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	
Non-Riparian	14	15	7.1	3	0	3000	3000	0.0	

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): Soo TSA

Legal Obligation	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	400	400	0	1	1	33	50	51.5	costs higher due to access
Site preparation	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	30	30	0	1	1	1320	1200	-9.1	
Brushing	30	30	0	1	1	1155	1250	8.2	
B/L Reforestation									
Surveys	300	300	0	1	1	33	60	81.8	costs higher due to prescription
Site Prep	25	25	0	1	1	1650	700	-57.6	
Planting	50	50	0	1	1	1320	1200	-9.1	
Brushing	50	50	0	1	1	1155	1250	8.2	
Impeded	**Last Year's 2002/2003 ha**	**This Year's 2002/2003 ha**	**% Change**	**Last Year's Priority**	**This Year's Priority**	**Cost Target $/ha**	**This Year's 2002/2003 $/ha**	**% difference**	**Reasons for Variation Greater than 15 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)**
Surveys	900	900	0	1	1	33	70	112.1	costs higher due to access
brushing	100	100	0	1	1	1155	1250	8.2	
Site Resoration									
Fill planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Rehab	0	0	#DIV/0!	0	0	2200	n/a	#VALUE!	
Reforestation	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	

Instructions

Technical instructions are provided in the Guidelines for the Sustainable Harvest Objective found at http://www.for.gov.bc.ca/cpp/rmpguidelines/

This set of tables has and will continue to evolve based on client recommendations for improvement.
The template design allows completion in a consistent format for all management units across the province.
Consistent completion allows tables to be merged to form higher level Sustainable Harvest summaries.

Note that more than one set of tables may be needed for one management unit.
For example, where a management unit extends across districts A and B,
a) Prepare a set of tables for the portion of the Management Unit in district "A".
b) Prepare a second set of tables for the portion of the Management Unit in district "B".
c) Prepare a third set of tables for the overall Management Unit.
Multiple districts that make up a management unit will be summarized by the region.

The name will automatically appear in the heading of the tables:

1) **Type the Management Unit name here:** TFL 38

2) Enter Data into the enhanced forestry table and the backlog program table

3) Make changes to the Input Performance Measures Table
Changes are linked to the Print Performance Measures table to be included with the RMP.

4) Summary Table for Management Unit
The Enhanced Forestry Table, the Backlog Program Table and the Performance Measures Table are summarized on the spreadsheet "Management Unit Summary."

TFL 38
Enhanced Forestry Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Stand Tending	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	125	125	15	100	100	30.00	3750	2
Spacing	150	150	150	150	150	2400.00	360000	1
Pruning	180	180	180	180	180	4800.00	864000	1
Fertilizing	40	40	40	40	40	300.00	12000	1
Other	0	0	0	0	0	0.00	0	
Totals hectares	495	495	385	470	470	2504.54	1,239,750	
Planning and prescriptions							2,000	1
Total dollars							1,241,750	
Forest Health Enhancement								
Spacing	0	0	0	0	0	0.00	0	
Pruning	0	0	0	0	0	0.00	0	
Other treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Habitat Supply and Biodiversity Enhancement								
Riparian treatments	0	0	0	0	0	0.00	0	
Non-riparian treatments	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Domestic Range								
Treatments	0	0	0	0	0	0.00	0	
Enhanced Forestry Activities - Management Unit Total								
Surveys	125	125	15	100	100	30.00	3,750	
Spacing	150	150	150	150	150	2,399.98	360,000	
Pruning	180	180	180	180	180	4,799.97	864,000	
Fertilizing	40	40	40	40	40	300.00	12,000	
Other stand tending activities	0	0	0	0	0	0.00	0	
Totals hectares	495	495	385	470	470	2,504.51	1,239,750	
Planning and prescriptions							2,000	
Studies funding							0	
Total dollars							1,241,750	

1/4/2006

TFL 38
Backlog Program Table
For the 2002/03 Fiscal Year

Activities	**Treatment Area Goals (ha)**					**Plan 2002/03**		
Legal Obligations	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)	Priority
Surveys	0	0	0	0	0	0.00	0	
Site preparation	0	0	0	0	0	0.00	0	
Planting	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Max. density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Total legal obligations							0	
Backlog Reforestation								
Surveys	200	200	200	100	100	33.00	6500	1
Site preparation	0	0	0	0	0	0.00	0	
Planting	15	15	15	15	15	400.00	6000	1
Brushing	60	60	60	50	50	1,200.00	72000	1
Totals hectares	275	275	275	165	165	307.27	84,500	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							2,000	
Total backlog reforestation							86,500	
Impeded areas								
Surveys	0	0	0	0	0	0.00	0	
Brushing	0	0	0	0	0	0.00	0	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total impeded areas							0	
Site Restoration								
Fill planting	0	0	0	0	0	0.00	0	
Rehabilitation	0	0	0	0	0	0.00	0	
Reforestation	0	0	0	0	0	0.00	0	
Totals hectares	0	0	0	0	0	0.00	0	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning dollars							0	
Total site restoration							0	
Backlog Program Activities - Management Unit Total								
Surveys	200	200	200	100	100	32.50	6500	
Site preparation	0	0	0	0	0	0.00	0	
Planting	15	15	15	15	15	399.92	6000	
Brushing	60	60	60	50	50	1,199.96	72000	
Density spacing	0	0	0	0	0	0.00	0	
Totals hectares	275	275	275	165	165	307.26	84500	
Seed purchase	0	0	0	0	0	0.00	0	
Prescriptions and planning							2,000	
Recommended studies							0	
Total backlog program							86,500	

* Seed purchase includes seedlings purchase. Units are number of seedlings, or specify.

1/4/2006

TFL 38
Instructions for developing the Performance Measures Table for FRBC Investments
For the 2002/03 Fiscal Year

This spreadsheet allows for calculation of key performance measures for activities under the Sustainable Harvest Objective.
FRBC requires completion of the Performance Measures Table to illustrate the impact of funding the proposed activities in this RMP.
For more information on how to use more management unit specific factors contact Frank Barber (250) 387-8906.
Entries needed are in red

Related Goal: Silviculture investment decisions will be guided by forest-level stewardship plans in 100 per cent of management units.
Please replace the following linked table title with the type of stewardship plan that guided the creation of this RMP:
Based on (Type 1, Type 2 silviculture strategy or specify if other)

The following default provincial factors may be replaced by management unit specific factors.
The following factors are used to generate the table. **Please replace these factors with localized factors where available.**

	Tree Improvement	Nursery Seedling Production	Silviculture Surveys	Site Preparation	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin
Potential volume/ha gain (m3/ha/yr) provincial factors:	0.77	0	0	0	2.9	0.41	0.25	0	0.46	
Years the factor will affect:	0	65	65	65	65	65	65	65	65	
Provincial factors for estimated value gain at harvest							5-15%	15-30%	1-5%	
Est. short term employment rate (person days/ha) provincial factors:	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1

1) Related goal: Over the next five years, Forest Renewal BC's investments to improve timber volume will increase the timber available for potential future harvest by 25 million cubic metres. (m3/ha/yr times ha times years gives m3)
Estimates of annual growth rate increase from each type of treatment over no treatment.

2) Related goal: The economic value of timber on all enhanced forestry treatment areas will be increased by between 5% and 30%.

3) Corporate commitment to employment
Enter an estimate for each activity of the number of 8 hour person days that are required to complete the activity per hectare.

Area affected by tree improvement, seedling production and silviculture surveys
Most of the information required to calculate performance measures is from links to the enhanced forestry and backlog tables.
The following additional information is needed for tree improvement, seedling production and silviculture surveys

	Area		
	Tree Improvement	**Nursery Seedling Production**	**Silviculture Surveys**
A Tree Improvement			
Estimate of the total number of hectares that will be planted with genetically improved seed, all funding sources, in 2002/2003			
Backlog area planted from backlog table	15		
Enter area of all other sites planted with improved trees			
Total area affected by tree improvement	15		
B Nursery production of seedlings			
Enter sowing requests from SPAR			
C Silviculture surveys			
Provincially, it is estimated that 33% of all silviculture surveys are for stocking and site productivity.			
These potentially provide improved estimates of site productivity and operational yield adjustment factors			
Total EFP surveys from the EFP table			125
Total backlog surveys from the backlog table.			200
33% of all silviculture surveys			107
Optionally, you may provide a more exact estimate:			
Estimate area of regen delay surveys			
Estimate area of free growing surveys			
Estimate area of pre-stand tending surveys			
Estimate of total surveys that will affect timber supply		(A)	0
Surveyed area that will affect timber supply Replace with (A) if a more exact estimate is calculated			107
Related goal: 25,000 hectares will be added back to the commercial forest base through surveys and planting (backlog NSR) Estimated area that was NSR projected to be reclassified as SR after survey in 2002/2003			
Related goal: 125,000 hectares of previously planted land will be brought to free growing status (impeded areas) Estimate area that will be classified as free growing after a survey in 2002/2003			

Habitat Supply
Melp staff professional judgement used to estimate this performance measure
Area where additional value provided to habitat/biodiversity resulting from enhanced forestry activity. ☐

TFL 38
Performance Measures Based on Activities Planned for 2002/2003
Based on (Type 1, Type 2 silviculture strategy or specify if other)

	Performance Measure	Tree Improvement	Nursery Seedling Production	Silv. Survey	Site prep.	Backlog Plant	Brush	Space	Prune	Fertilize	Support staff and admin	Totals
	Inputs											
A	**Planned treatment area (ha) in 2002/2003**	15	0	200	0	15	60	150	180	40	660	
1.0	**Timber Supply**											
1.1	Potential volume/ha gain (m3/ha/yr)	0.41	0	0	0	2.9	0.41	0.25	0	0.46		
1.2	Years the factor will apply	0	65	65	65	65	65	65	65	65		
1.3	Pot. total merch. volume increment in 65 years (m3)	0	0	0	0	2,867	1,599	2,438	0	1,200		8,104
1.4	Est. yrs reduced to achieve management objectives	5-10	1-3	5-10	0	5-20	5	5-30	0	5-10		
1.4	Est. area that will be reclassified as stocked (ha)			50								50
1.5	Est. area that will be declared as free growing (ha)			100								100
2.0	**Wood Value**											
2.1	Percent improvement in total value at harvest (Compared to no treatment)							5-15%	15-30%	1-5%		
3.0	**Employment**											
3.1	Estimated short term employment (person days/ha)	0.1	0.34	0.1	0.95	2	2.61	3.96	4.54	0.18	0.1	
3.2	Estimated total employment (person days/year)	2	0	20	0	30	157	594	817	7	66	
3.3	Estimated total full time equivalent positions (FTE)	0	0	0	0	0	1	3	5	0	0	9
4.1	**Forest Health Enhancement (ha)**											0
5.1	**Habitat Supply**											
5.2	Planned area for specific wildlife forage or habitat maintenance in 2002/2003 (ha)											0
5.3	Est. area with secondary value provided to biodiversity (ha)											0

TFL 38
Management Unit Summary Table
For the 2002/03 Fiscal Year

	Treatment Area Goals (ha)					Plan 2002/03	
	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	Unit Cost ($/ha)	Funding ($)
Enhanced Forestry Program Field Activities	495	495	385	470	470	2,505	1,239,750
Planning, prescriptions and seedlings							2,000
Backlog Program Field Activities	275	275	275	165	165	307	84,500
Planning, prescriptions and seedlings							2,000
Totals	770	770	660	635	635		1,328,250

Performance Measures

Potential total merchentable volume increment in 65 years	8,104 m^3
Estimated ha that will be reclassified as stocked	50 ha
Estimated ha that will be declared as free growing	100 ha
Estimated total full time equivalent positions generated	9 FTEs
Forest health enhancement area	0 ha
Planned area for specific wildlife forage or habitat maintenance	0 ha
Estimated area with secondary value provided to biodiversity	0 ha

Table A: SH Plan Comparison - Enhanced Forestry

Management Unit/Supply Block(TFL): TFL 38

Stand Tending	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference #)
Surveys	125	125	0.0	3	2	33	30	-9.1	
Spacing	65	150	130.8	1	1	1980	2400	21.2	
Pruning	50	180	260.0	2	1	2420	4800	98.3	
Fertilizing	0	40	#DIV/0!	0	1	330	300	-9.1	

Forest Health	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 15 % Between Plans or Exceeds Cost Target (Include separate attachment if more space necessary with reference.#)
Spacing	0	0	#DIV/0!	0	0	1980	n/a	#VALUE!	
Pruning	0	0	#DIV/0!	0	0	2420	n/a	#VALUE!	
Habitat Supply/ Biodiversity									
Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	
Non-Riparian	0	0	#DIV/0!	0	0	3000	n/a	#VALUE!	

Table A: SH Plan Comparison - Backlog Program

Management Unit/Supply Block(TFL): **TFL 38**

	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 10 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Legal Obligation									
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Site preparation	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
B/L Reforestation									
Surveys	75	200	166.666667	3	1	33	33	0.0	
Site Prep	0	0	#DIV/0!	0	0	1650	n/a	#VALUE!	
Planting	10	15	50	1	1	1320	400	-69.7	
Brushing	50	60	20	1	1	1155	1200	3.9	

	Last Year's 2002/2003 ha	This Year's 2002/2003 ha	% Change	Last Year's Priority	This Year's Priority	Cost Target $/ha	This Year's 2002/2003 $/ha	% difference	Reasons for Variation Greater than 10 % Between Plans or Cost Target (Include separate attachment if more space necessary with reference #)
Impeded									
Surveys	0	0	#DIV/0!	0	0	33	n/a	#VALUE!	
Brushing	0	0	#DIV/0!	0	0	1155	n/a	#VALUE!	
Site Resoration									
Fill planting	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	
Rehab	0	0	#DIV/0!	0	0	2200	n/a	#VALUE!	
Reforestation	0	0	#DIV/0!	0	0	1320	n/a	#VALUE!	

Forest Renewal BC - Pacific Region

Enhancing Environmental Values

2002-03 Resource Management Plan

13 July 01

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The cover photograph shows a rehabilitated landslide in the Bonanza Creek watershed on the Queen Charlotte Islands.

3.1 Introduction

The purpose of the Enhancing Environmental Values resource management plan is to ensure that "future investment by Forest Renewal BC will be targeted at restoring and protecting fish habitat and domestic water supplies in priority watersheds which have been damaged or are threatened by pre-forest practices code forest development"[1].

Identification of Fish Species and Special Populations of Concern

The EEV RMP guidelines asked that fish species and/or populations of concern in each region and sources of this information be identified. The information presented below has been provided by regional fisheries specialists using their experience as well as various inventory studies.

Region 1

The freshwaters of the region are oligotrophic and therefore generally unproductive. There is general agreement among fisheries biologists that fish populations are declining in the Vancouver Island Region. Several factors are responsible including commercial, native and recreational fishing, freshwater habitat deterioration related to logging practices and human settlements. Factors related to linear corridors and agriculture/aquaculture are also having impacts.

Species and stocks of concern that are impacted by the variables above include all forty stocks of summer run Steelhead, all east coast Vancouver Island winter run steelhead, mainland coast inlet summer and winter run Steelhead, Dolly Varden char, anadromous cutthroat trout throughout the region, Brown Trout in Cowichan River, Little Qualicum River and Adam River and Piscivorous Cutthroat Trout in Large lakes.

The decline and/or loss of species and stocks results in reduced opportunities in extraction of this resource as well as the obvious loss for conservation purposes.

Region 2

In the Lower Mainland Region the province requires information to make resource management decisions for four (4) priority provincially managed fish species. The species are all wild-indigenous and include:

- steelhead trout (anadromous)
- coastal cutthroat trout (resident and anadromous)
- Dolly Varden char (resident and anadromous)
- bull trout char (resident, adfluvial and anadromous)

Steelhead trout are considered to be the province's premier sportfish. Coastal cutthroat, Dolly Varden and bull trout are all presently blue-listed by the province's Conservation

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[1] Resource Management Plan Guidelines for the Enhancing Environmental Values Strategic Objective, March 2, 2001

Data Center. Bull trout are also the only fish species included in the Forest Practices Code's Managing Identified Wildlife Guidebook.

Steelhead capacity estimates are required for all steelhead systems. Bull trout, Dolly Varden and cutthroat trout presence and distribution, stock status and species determination/confirmation through genetic analysis is required. Basic life history information is needed to aid in species management and resource decisions, including in-stream works timing.

Priority areas for immediate inventory and assessment include: Pitt River and Lake, Indian River, Harrison River and Lake, Chehalis River, Chilliwack River, Birkenhead River and Homathco River.

Although a federal program responsibility, present stock status for the five species of salmon (Chinook, chum, pink, coho and sockeye) found in Lower Mainland Region is also needed.

Region 5

Species of concern include Steelhead trout, Cutthroat trout, Dolly Varden char.

Steelhead Trout

Approximately 40 streams on the mid-coast have steelhead populations. All of these populations are at risk as a result of present poor ocean survival conditions coupled with river-based problems. Specifically:

Bella Coola - Population number is low; presently closed to harvesting by sport and native fisheries. Habitat loss has also contributed to decline. Recovery plan has been developed. Monitoring of population must continue in order ensure recovery.

Dean River - very high value sport fishery; population at risk from incidental harvest by commercial fishery as well as habitat loss from past forest harvesting

Dallery River - small population of summer run steelhead; high commercial fishery harvest during Owikeno sockeye run; planned forest development may increase risk

Koeye River, Nekite River, Kwatna River, Chuckwalla River, Kilbella River - important steelhead rivers on the mid-coast that are at risk. In addition, small populations that are probably less than 50 individuals (Frenchman Creek, Clyak River, etc.) are especially vulnerable to habitat alterations.

Cutthroat

Bella Coola - significant habitat loss and past sport fishing harvest has put this population at risk; continuing assessment is needed to address concerns.

Dolly Varden

Doos Creek - although this is still a pristine watershed, we are concerned about the potential development on this system that is isolated from the rest of the Owikeno watershed by a high set of falls.

Region 6

The Queen Charlotte Island (QCI) EEV planning district has very rich and diverse fish resources. This said, many of the district's watersheds are targeted by both provincial and federal fish resource management agencies for restorative activities.

Species of concern include those species that are "listed" by the British Columbia Conservation Data Center (CDC) and include Giant Black stickleback, Dolly Varden char and coastal cutthroat trout (both anadromous and non-anadromous forms). The habitats for Giant Black stickleback are not primarily targeted for restoration, as their habitats are located in less impacted lakes. On the other hand, Dolly Varden and coastal cutthroat habitats are priorities for restoration as these species are particularly sensitive to impacts caused by land use activities, particularly timber harvesting activities.

Provincially managed populations of regional significance include summer run steelhead populations in both the Yakoun River and Pallant Creeks. In addition, winter run steelhead populations in these, and many other developed watersheds in the district, are also of particular concern.

Of equal regional concern are stocks of "odd year" pink, coho and chum salmon from smaller watersheds that are generally depressed across the district when compared to historical abundance. Some examples of QCI district watersheds with populations that exhibit this negative trend include the (but are not limited to): Sewell, Tasu, Louise Island, Long, Rennell Sound, Deanne and Masset Inlet Watershed Units. In addition, other salmon populations of particular regional concern due to their depressed abundance, stock uniqueness, or historical values for native, sport or commercial fisheries include: Upper Mathers and Masset Inlet sockeye stocks and the Yakoun, Mamin, and Mathers Watershed Chinook populations.

3.2 Resource Management Plan Development

The 2002-03 enhancing environmental values resource management plan was developed jointly by the Ministry of Forests, the Ministry of Environment, Lands and Parks, the Department of Fisheries and Oceans and Forest Renewal BC. The process involved collecting specific information from all of the multi-year agreement holders who, in turn, consulted with their implementing partners. A list of personnel involved in the process is included as Appendix A.

Identification of Watershed Units

As part of the 2001-02 enhancing environmental values resource management plan, the Ministry of Environment, Lands and Parks broke down the Pacific region into 543 watershed units (see map attached as Appendix B). The watershed units vary in size from approximately 10 to 500 km^2. The 2002-03 resource management plan added two new watersheds (550 Johnstone Straight and 551 Queen Charlotte Straight) to the watershed units that were delineated for the 2001-02 resource management plan.

Identification of Key Watersheds

A key watershed is defined as a watershed unit containing high values of either fish or water resources. To identify the key watersheds, all the watershed units were reviewed by the Ministry of Environment, Lands and Parks and the Department of Fisheries and Oceans to quantify the fish and water resources within each drainage. Each agency developed its own rating scale to reflect their individual mandates. The following criteria were used.

The Ministry of Environment, Lands and Parks assessed each watershed according to the following criteria.

MELP Fish Criteria	Maximum Score
Level of Use	5
Fish Management Values	15
Unique Fish Species	5
Production Decline	8
Threatened Aquatic Population	5
Historic Enhancement	1
Scientific Research	1
Total	40

MELP Water Criteria	Maximum Score
Number of Points of Diversion	12
Community Watershed	20
Total	32

The Department of Fisheries and Oceans assessed each watershed according to the following criteria.

DFO Fish Criteria	**Maximum Score**
Commercial and Recreational Values	10
Native Fisheries Values	10
Conservation Status	15
Total	35

A watershed was considered to have high value for fish if the Ministry of Environment, Lands and Parks score was greater than 34 or the Department of Fisheries and Oceans score was greater than 17. If the score for water was greater than 19 the watershed was considered to have a high value as a domestic water supply.

Identification of Priority Key Watersheds

A priority key watershed is a key watershed that contains significant pre-code, forestry related impacts and has a high probability that the fish or water resources can be successfully restored. To obtain this information, the Ministry of Forests solicited data from the multi-year agreement holders regarding the presence of pre-code forestry related impacts to the fish and water resources, the ownership of the land (e.g. private holdings or Crown land) and whether or not traditional restoration efforts were likely to be successful. They were also asked to report on the current status of their Watershed Restoration Program projects by identifying transitional watersheds (i.e. watersheds which are not designated as key watersheds but where up-slope works were underway during the 1999-00 fiscal year) and by filling in the following matrix using the abbreviations listed below.

Stage	**Up-slope**	**Riparian**	**In-stream**
Overview Assessment			
Prescriptions			
Works			
Effectiveness Evaluation			

P for planned - if this stage of the project is planned to commence during the 2002-03 fiscal year.
O for ongoing - if this stage of the project is being undertaken during the 2001-02 fiscal year.
C for completed - if this stage of the project is finished.
If none of these conditions apply then leave the cell blank (e.g. no up slope activities are to be undertaken for this sub-basin).

Once the data was received from the multi-year agreement holder it was consolidated into a single spreadsheet and reviewed by the appropriate government agencies. The verified data was then used to assign watershed categories according to the following rules.

Watershed Category	Definition
1	Priority key watersheds
2	Watersheds which contain a significant area of private forest land but also has a "cost shared" restoration plan in place.
2B	Watersheds which contain a significant area of private forest land but does not have a "cost shared" restoration plan in place.
3	Watersheds which do not contain high value fish or water resources
4	Watersheds in which restoration efforts are unlikely to be successful
5	Watersheds where there is insufficient knowledge in order to make a determination

Identification of Target Watersheds

Forest Renewal BC has set the objective if completing the restoration of 20% of the priority key watersheds by March 31, 2004[2]. A target watershed is a priority key watershed that has been selected for completion by this date.

A priority key watershed was selected to be a target watershed if it had works underway or completed in at least two of the three components (i.e. up-slope, riparian or in-stream) as of March 31, 2000. Applying this criteria identified the following 49 projects as target watersheds.

District	Watershed Number	Watershed Name
DCK	71	Slesse Creek
DCK	74	Silverhope Creek
DCK	89	Nahatlatch River
DCK	92	Chehalis River
DCK	96	Norrish Creek
DCK	123	Wahleach Creek
DCK	124	Hicks Creek
DCR	2	Eve River
DCR	10	Muchalat
DCR	20	Bigtree Creek
DCR	23	White River
DCR	61	Zeballos River
DMC	444	Machmell River

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[2] Forest Renewal BC Business Plan 2000/2001

District	Watershed Number	Watershed Name
DMC	445	Sheemahant River
DMC	447	Talchako River
DMC	459	Kwatna River
DMC	460	Chuckwalla River
DMC	461	Kilbella River
DMC	489	Kimsquit River
DMC	492	Bella Coola River
DPM	3	Vernon Lake
DPM	341	Woss Lake
DPM	342	Davie River
DPM	344	Maquilla River
DPM	347	Kilpala
DPM	348	Middle Nimpkish
DPM	349	Upper Nimpkish
DPM	361	Keogh River
DPM	537	Pink Creek
DQC	139	Yakoun
DQC	141	Louise
DQC	142	Naden
DQC	149	Deena
DQC	150	Copper
DQC	153	Sewell
DQC	152	Tasu
DSC	421	Tzoonie River
DSC	433	Chapman Creek
DSI	171	Gordon River
DSI	172	San Juan River
DSI	210	Caycuse River
DSI	216	Sarita
DSI	225	Sproat Lake
DSI	231	Mooyah River
DSI	239	Cypre River
DSI	249	Kennedy Flats
DSI	252	Henderson
DSQ	110	Indian River
DSQ	254	Ashlu Creek
DSQ	265	Mamquam River

It should be noted that under the current policies, all priority key watersheds are eligible for Forest Renewal BC funding. It is likely, however, that Forest Renewal BC will impose some business rules that require a multi-year agreement holder to allocate a designated percentage of their funding to be used exclusively on target watersheds.

3.3 Watershed Unit Rankings

The results of the data collection exercise are listed in Appendix C (Table 3) and Appendix D (Table 4). Digital versions of these tables are available on the Internet at http://www.for.gov.bc.ca/cpp/rmp/documents.htm. The digital versions are in excel format and contain all of the information used to assign the watersheds into their specific categories. The spreadsheets have been formatted to conform to the layout specified in the resource management plan guidelines. To access the additional information some of the columns in the spreadsheet will have to be "unhidden".

The watersheds in the Pacific Region are distributed as follows:

Category	Number of Watersheds	% of Total watersheds
1	129	24
2	1	<1
2B	59	11
3	184	34
4	9	2
5	163	30
Total number of watersheds	545	100
Key watersheds	227	42
Priority key watersheds	131	24
Target watersheds	50	9
Transitional watersheds	51	9

Note that transitional watersheds are no longer eligible for Forest Renewal BC funding.

The following abbreviations are used in Appendix C to indicate target fish species.

Abbreviation	Fish Species
BT	Bull Trout
CHI	Chinook Salmon
CM	Chum Salmon
CO	Coho Salmon
CT	Cutthroat Trout
DV	Dolly Varden
KO	Kokanee
PK	Pink Salmon
RB	Rainbow Trout
SCT	Sea-run Cutthroat Trout
SDV	Sea-run Dolly Varden
SK	Sockeye Salmon
ST(S)	Summer Run Steelhead
ST(W)	Winter Run Steelhead

Appendix A – List of Contacts

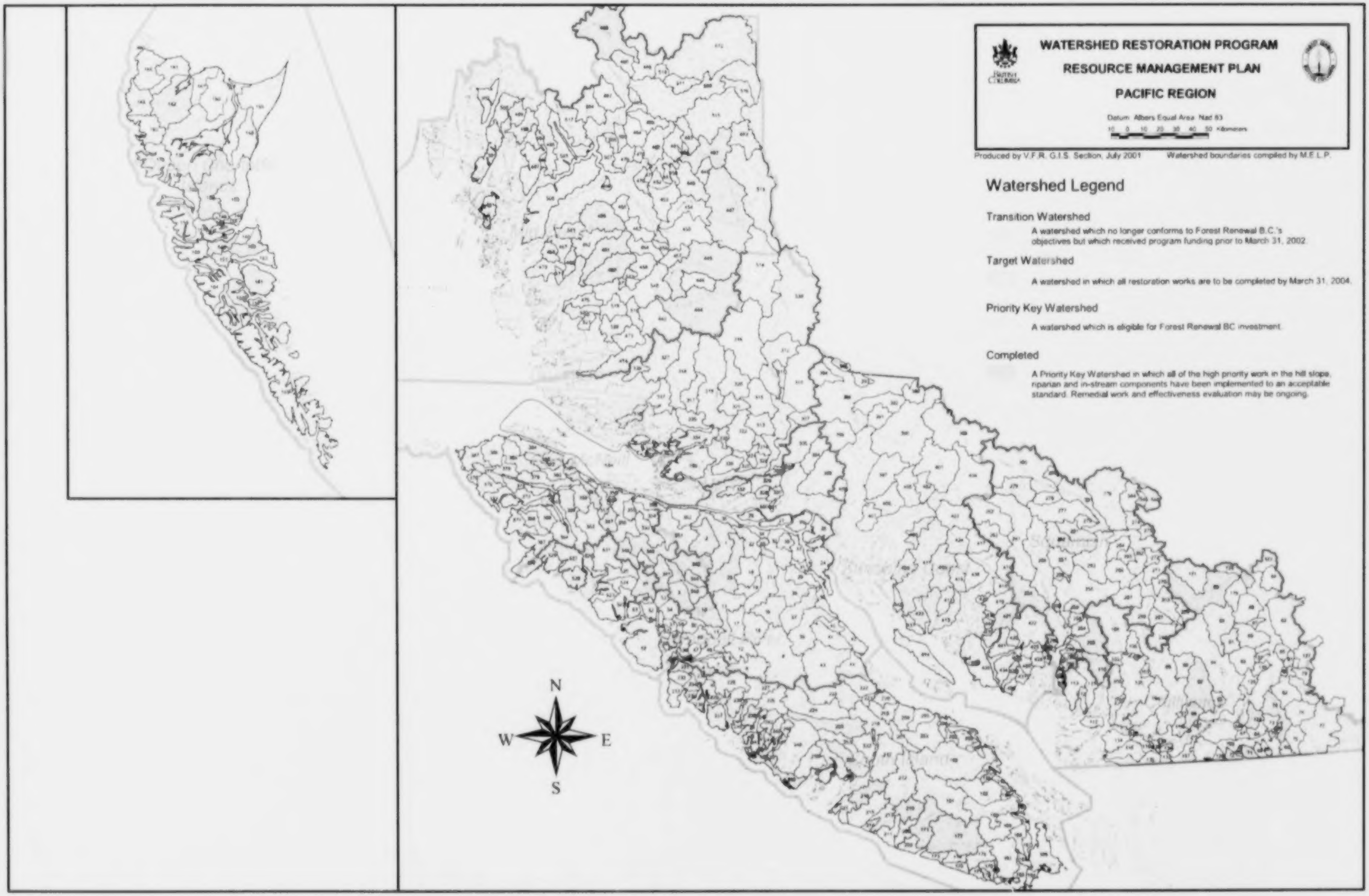
Resource Management Plan Committee

Name	Agency	Telephone Number	E-mail Address
Mike Younie	Ministry of Environment, Lands and Parks	604 582-5391	mike.younie@gems8.gov.bc.ca
Jim DeHart	Forest Renewal BC	250 286-7720	jim.dehart@gems3.gov.bc.ca
Paul Marquis	Ministry of Forests	250 751-7051	paul.marquis@gems6.gov.bc.ca
Mel Sheng	Department of Fisheries and Oceans	250 756-7016	Shengm@dfo-mpo.gc.ca

Multi-year Agreement Holder Contacts

Name	Licensee	Telephone Number	E-mail Address
Ian Dodd	Husby	250 598-8042	iand@island.net
Derek Ferguson	Weyerhaeuser JS Jones	250 286-3323	derekf@island.net
Dave Harrison	Canfor	604 661-5381	daveharrison@mail.canfor.ca
Ken Hall	Western	250 286-4120	khall@western.com
Ted Holtby	Fraser TSA	604 823-6525	catrmole@direct.ca
Jack Turley	TFL	250 923-7943	jturley@oberon.ark.com
Ian Robertson	Interfor	250 286-4547	ian_robertson@interfor.com
Wayne Sakamoto	Soo TSA	604 894-6004	wbsakamoto@home.com

Appendix B – Watershed Map



WATERSHED RESTORATION PROGRAM

RESOURCE MANAGEMENT PLAN

PACIFIC REGION

Datum: Albers Equal Area Nad 83

Produced by V.F.R. G.I.S. Section, July 2001

Watershed boundaries compiled by M.E.L.P.

Watershed Legend

Transition Watershed

A watershed which no longer conforms to Forest Renewal B.C.'s objectives but which received program funding prior to March 31, 2002

Target Watershed

A watershed in which all restoration works are to be completed by March 31, 2004.

Priority Key Watershed

A watershed which is eligible for Forest Renewal BC investment.

Completed

A Priority Key Watershed in which all of the high priority work in the hill slope, riparian and in-stream components have been implemented to an acceptable standard. Remedial work and effectiveness evaluation may be ongoing.

Appendix C – Table 3: Watershed List by Forest District

2002-03 WRP RMP Summary

Category	Count	%
1	129	24%
2	1	0%
2B	59	11%
3	184	34%
4	9	2%
5	163	30%
Total	545	100%
Key	227	42%
Priority Key	131	24%
Target	50	9%
Transitional	51	9%

545

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MoF District	Watershed Name	Watershed Number	Regional Priority for Domestic Water	Regional Priority for Fish	Target Species	Issues	Priority Key Watershed	Implementing Partners
DCR	Adam River	1	NO	NO			NO	Weyerhaeuser
DCR	Eve River	2	NO	YES			YES	Weyerhaeuser
DPM	Vernon Lake	3	NO	YES	SK, CO, SH, CT		YES	Canfor
DCR	Houston River	4	NO	NO			NO	Western
DCR	Burman River	6	NO	YES		Provincial Park	NO	Western
DCR	Jacklah River	7	NO	NO	CH, Pygmy Longfin Smelt		NO	Western
DCR	Machley Creek	8	NO	NO	SK		NO	Western
DCR	Buttle	9	YES	NO		Provincial Park	NO	
DCR	Muchalat	10	NO	YES	SK, CO, SH, CT	Provincial Park	YES	Canfor / Western
DCR	Upana	11	NO	NO	CO		NO	Western
DCR	Ucona	12	NO	YES	CH, CM		YES	Western
DCR	Gold	13	NO	YES	PK, CM	Provincial Park	YES	Western
DCR	Silverado	14	NO	NO	PK		NO	Western
DCR	Elk River	15	NO	NO	PK	Provincial Park	NO	Interfor
DCR	Upper Campbell River	16	YES	NO		Provincial Park	NO	MoF
DCR	Heber River	17	NO	NO	BT, CO, CT	Provincial Park	NO	TFL / Western
DCR	Memakay River	18	NO	YES			YES	Weyerhaeuser
DCR	Grilse Creek	19	NO	YES	Pygmy Longfin Smelt		YES	Weyerhaeuser
DCR	Bigtree Creek	20	NO	YES	BT, SSH		YES	Weyerhaeuser
DCR	Upper Salmon River	21	NO	YES			YES	Weyerhaeuser
DCR	Lower Salmon River	22	NO	YES	BT, SK		YES	Weyerhaeuser
DCR	White River	23	YES	NO		Provincial Park	YES	Weyerhaeuser
DCR	Quadra Island	24	NO	YES	SSH	Provincial Park	YES	TFL
DCR	Sonora Island	25	NO	NO			NO	TFL
DCR	East Thurlow Island	26	NO	NO	BT, SK		NO	TFL
DCR	West Thurlow Island	27	NO	NO			NO	TFL / Interfor
DCR	Hardwicke Island	28	NO	NO	BT, DV		NO	TFL
DCR	Mohun Creek	29	NO	NO	SK		NO	MoF
DCR	Pye Creek	30	NO	NO			NO	Interfor
DCR	Menzies Creek	31	NO	NO	Sturgeon		NO	MoF
DCR	Amor de Cosmos Creek	32	NO	NO	CO		NO	Interfor
DCR	Elk Bay Face Unit	33	NO	NO			NO	Interfor
DCR	Sayward Face	34	NO	NO			NO	Interfor / Weyerhaeuser
DCR	Kelsey Bay Face Unit	35	NO	NO			NO	Weyerhaeuser
DCR	Lower Campbell River	36	YES	YES		Provincial Park	NO	MoF
DCR	Quinsam River	37	NO	YES	SSH	Provincial Park	NO	
DCR	Simms Face	38	NO	YES			NO	
DCR	Oyster River	39	YES	YES			NO	TFL
DCR	Black Creek	40	NO	YES		Provincial Park	NO	TFL
DCR	Tsolum River	41	YES	YES	CO, PK		NO	
DCR	Little River Face	42	NO	NO			NO	
DCR	Puntledge River	43	YES	YES			NO	TFL
DCR	Trent River	44	NO	YES			NO	TFL
DCR	Bligh Island	45	NO	NO		Provincial Park	NO	MoF
DCR	Gore Island	46	NO	NO			NO	MoF
DCR	Kleeptee Creek	47	NO	NO	PK		NO	Interfor / Western

MoF District	Watershed Name	Watershed Number	Regional Priority for Domestic Water	Regional Priority for Fish	Target Species	Issues	Priority Key Watershed	Implementing Partners
DCR	McCurdy Creek	48	NO	NO	CO		NO	Western
DCR	Tlupana River	49	NO	YES			YES	Western
DCR	Conuma River	50	NO	YES			YES	Western
DCR	Sucwoa River	51	NO	YES			NO	Western
DCR	Nootka Island	52	NO	YES	Pygmy Longfin Smelt		YES	Western
DCR	Tahsis River	53	YES	YES		Provincial Park	YES	Western
DCR	Leiner/Perry River	54	NO	YES			YES	Western
DCR	Deserted Lake	55	NO	NO			NO	Western
DCR	Hisnit Inlet	56	NO	NO	CM		NO	Interfor / Western
DCR	Tsowwin River	57	NO	YES			YES	Western
DCR	Tahsis Inlet	58	NO	NO	CO	Provincial Park	NO	Western
DCR	Canton	59	NO	NO	PK, CM		NO	Western
DCR	Little Zaballos River	60	NO	NO			NO	MoF
DCR	Zeballos River	61	YES	YES			YES	Western
DCR	Lutes Creek	62	NO	YES	BT		NO	MoF
DCR	Espinosa	63	NO	NO			NO	MoF
DCK	Airplane/Foley	64	NO	YES			YES	Fraser Cartel
DCK	Borden Creek	65	NO	NO			NO	Fraser Cartel
DCK	Centre Creek	66	NO	NO			NO	Fraser Cartel
DCK	Chipmunk Creek	67	NO	NO	PK, CH		NO	MoF
DCK	Nesakwatch Creek	68	NO	NO			NO	MoF
DCK	Paleface Creek	69	NO	NO			NO	MoF
DCK	Post Creek	70	NO	YES	SSH		NO	
DCK	Slesse Creek	71	NO	YES			YES	MoF
DCK	Tamihi Creek	72	NO	NO	CH, SK, DV		NO	Fraser Cartel
DCK	Yola/Cantelon Creeks	73	NO	NO	PK, CM		NO	
DCK	Silverhope Creek	74	NO	YES			YES	Interfor
DCK	Klesilkwa River	75	NO	NO			NO	
DCK	Sumallo/Twenty Mile Creeks	76	NO	NO			NO	
DCK	Skagit River	77	NO	NO			NO	
DCK	Sowoqua Creek	78	NO	NO	BT		NO	Tamihi
DCK	Dewdney Creek	79	NO	NO	CO		NO	
DCK	Deneau Creek	80	NO	NO	DV, ST(W), BT		NO	Fraser Cartel
DCK	Ladner Creek	81	NO	NO	CT, CO, ST(W), DV		NO	Fraser Cartel
DCK	Coquihalla River	82	NO	NO	CH, CHI, CO, PK, SK,ST(W), SDV		NO	
DCK	Anderson River	83	NO	NO	ST(S), CHI		NO	
DCK	Ainslie River	84	NO	NO	ST(W), CT, DV		NO	
DCK	Siwash Creek	85	NO	NO	CO, CT, ST(W)		NO	
DCK	Spuzzum Creek	86	YES	NO	CO, CH, SCT, SDV		YES	Fraser Cartel
DCK	Tsileuh Creek	87	NO	NO	ST(S), ST(W)		NO	
DCK	Scuzzy Creek	88	NO	NO	RB, DV, CT		NO	Fraser Cartel
DCK	Nahatlatch River	89	NO	YES	CH, PK, CHI, SK, CO, SDV, ST(W), SCT, CT		YES	Fraser Cartel
DCK	Big Silver Creek	90	NO	YES	ST(W), ST(S), CHI, CO, CH		YES	
DCK	Hornet/Clear Creeks	91	NO	NO	CO, CH, PK, SCT		NO	Western
DCK	Chehalis River	92	NO	YES	CT, CH, PK, CO, ST(W)		YES	Canfor
DCK	Cogburn/Talc Creeks	93	NO	NO	DV, CT		NO	Fraser Cartel
DCK	Harrison River	94	YES	YES	RB, DV, CT		NO	MoF

MoF District	Watershed Name	Watershed Number	Regional Priority for Domestic Water	Regional Priority for Fish	Target Species	Issues	Priority Key Watershed	Implementing Partners
DCK	Weaver Creek	95	NO	YES	DV, ST(S), ST(W), PK, CO		YES	
DCK	Norrish Creek	96	YES	YES	CH, CHI, CO, PK, SCT, SDV		YES	Canfor
DCK	Cascade Creek	97	NO	NO			NO	Canfor
DCK	Winslow/George Good Creeks	98	NO	NO	SK, CH, CO, ST(S), RB, CT, KO		NO	
DCK	Stave River	99	NO	YES	CO, CH, SCT, SDV		NO	
DCK	Corbold Creek	100	NO	YES	ST(W), CT, DV		NO	
DCK	Fish Hatchery Creek	101	NO	NO	CO, CH, PK, SCT		NO	
DCK	Boise Creek	102	NO	NO	ST(S), CT		NO	
DCK	Gurney Creek	103	NO	NO			NO	
DCK	Alouette River	104	NO	YES	CH, CO, PK, SK, SCT, SDV		NO	
DCK	Pitt Lake	105	NO	YES	ST(W),CHI, PK, CO, CH, DV, CT		NO	J S Jones
DCK	Upper Pitt River	106	NO	YES	ST(W)		YES	
DCK	Or Creek	107	NO	NO	CT, CO		NO	MoF
DCK	Coquitlam River	108	YES	YES	CT, CH, PK, CO, ST(W)		YES	
DCK	Chilliwack River	109	NO	YES	CT, CH, PK, CO, ST(W)		YES	MELP
DSQ	Indian River	110	NO	YES	DV, CT		YES	Interfor
DCK	Seymour River	111	YES	NO	ST(W), PK, CH, CO, CT, SCT, SK		NO	
DCK	Lynn Creek	112	NO	NO	CH, CHI, CO, ST(W), SCT, SK, PK, RB, SDV		NO	
DCK	Capilano River	113	YES	YES	ST(S), ST(W), CT, DV		NO	
DCK	Serpentine River	114	NO	NO	CO, CT		NO	
DCK	Nikomekl River	115	NO	NO	ST(S), SK, CH, CHI, CO, RB, CT, PK		NO	
DCK	Salmon River	116	NO	YES	ST(W), ST(S), CHI, PK, CH, DV		NO	
DCK	Brunette River	117	NO	NO	CH, CO, ST(W), RB, CT, PK, CHI, SK, DV, SCT, SDV		NO	
DCK	Hatzic Lake	118	YES	YES	CH, CHI, CO, ST(W), CT, SK, PK, RB		NO	
DCK	Kookipi Creek	119	NO	NO	CH		NO	
DCK	Log Creek	120	NO	NO	ST(W), PK, CH, CO, CT, SCT, SK		NO	
DCK	Mehatl River	121	NO	NO	ST(W), CT, DV		NO	
DCK	Mowhokum Creek	122	NO	NO	CT, CO, ST(W), DV		NO	
DCK	Wahleach Creek	123	NO	YES	CT, CO, ST(W), DV		YES	Interfor
DCK	Hicks Creek	124	NO	YES	SK, CH, CO, ST(S), RB, CT, KO		YES	Interfor
DCK	Yorkson Creek	125	NO	NO	CT, CH, PK, CO, ST(W)		NO	
DCK	Frosst Creek	126	NO	NO	ST(W), ST(S), CT		NO	
DCK	Boston Bar Creek	127	NO	YES	CT, DV		NO	
DCK	Liumchen Creek	128	NO	NO	ST(W), PK, CH, CO, CT, SCT		NO	MoF
DCK	Ruby Creek	129	NO	NO	CT, ST(S), ST(W), CHI		NO	
DCK	Emory Creek	130	NO	NO	CT, CO, ST(W), DV		NO	
DCK	Yale Creek	131	NO	NO	CO, CT, ST(W), RB		NO	MoF
DCK	Campbell Creek	132	NO	YES	PK, CO, CHI, DV, SCT, ST(W)		NO	
DCK	Fishtrap Creek	133	NO	NO			NO	
DCK	McLennan Creek	134	NO	NO	DV, CT		NO	
DCK	Nathan Creek	135	NO	NO	SK, CH, CHI, CO, ST(S), CT, DV		NO	
DCK	Hannah Creek	136	NO	NO	ST(W)		NO	
DCK	Sumas River	137	NO	NO	CO, CH, PK, SCT		NO	
DQC	Massett	138	NO	YES	CH, CHI, CO, PK, SK,ST(W), SDV		YES	Weyerhaeuser
DQC	Yakoun	139	NO	YES	ST(W), ST(S), CHI, CT		YES	Weyerhaeuser
DQC	Alliford	140	NO	NO	CH, PK, CHI, SK, CO, SDV, ST(W), SCT, CT		NO	Weyerhaeuser
DQC	Louise	141	NO	YES	CHI, CO, CT, ST(W)		YES	Weyerhaeuser

MoF District	Watershed Name	Watershed Number	Regional Priority for Domestic Water	Regional Priority for Fish	Target Species	Issues	Priority Key Watershed	Implementing Partners
DQC	Naden	142	NO	YES	ST(S), CT, DV		YES	Husby
DQC	Cave	143	NO	YES	ST(W), CT, DV		YES	Husby
DQC	Tartu	144	NO	NO	CT, CO, PK		NO	Husby
DQC	Rennell	145	NO	YES	ST(W), CT		YES	MoF
DQC	Honna	146	YES	YES	ST(W), PK, CO, CT		YES	Weyerhaeuser
DQC	Tarundl	147	YES	NO	CT, ST(W)		YES	MoF
DQC	Chinukundl	148	NO	NO	ST(W), CT		NO	MoF
DQC	Deena	149	NO	YES	ST(W), CT		YES	J S Jones
DQC	Copper	150	NO	YES	PK, RB, DV, CT		YES	J S Jones
DQC	Pallant	151	NO	YES	CH, CO, ST(W), RB, CT, PK, CHI, SK, DV, SCT, SDV		YES	Western
DQC	Tasu	152	NO	YES	CO, CH, PK, SCT		YES	Western
DQC	Sewell	153	NO	YES	CH, CO, ST(W), RB, CT, DV		YES	Western
DQC	Talunkwan	154	NO	NO			NO	Western
DQC	Tlell	155	NO	YES	ST(S), SK, CH, CHI, CO, RB, CT, PK		YES	Weyerhaeuser
DQC	Skidegate	156	YES	NO			NO	MoF
DQC	Long	157	NO	YES			NO	
DQC	Van	158	NO	NO			NO	
DQC	Naikoon	159	NO	NO			NO	
DQC	Hancock	160	NO	NO			NO	
DQC	Jalun	161	NO	NO			NO	
DQC	Coates	162	NO	NO			NO	
DQC	Cumshewa	163	NO	YES			YES	Weyerhaeuser
DQC	Kuper	164	NO	YES			NO	Weyerhaeuser
DQC	Moresby	165	NO	NO			NO	
DQC	Langara	166	NO	NO			NO	
DQC	Christie	167	NO	NO			NO	
DQC	Mayer	168	NO	NO			NO	
DQC	Kitgoro	169	NO	NO			NO	
DQC	Mercer	170	NO	NO			NO	
DSI	Gordon River	171	NO	YES			YES	TFL
DSI	San Juan River	172	NO	YES			YES	TFL
DSI	Sombrio Creek	173	NO	NO			NO	Western
DSI	Loss Creek	174	NO	NO			NO	Western
DSI	Bent Creek	175	NO	NO			NO	Western
DSI	Jordan River	176	NO	YES			NO	Western
DSI	Goudie Creek	177	YES	NO			NO	Western
DSI	Kirby	178	NO	NO			NO	
DSI	Muir Creek	179	NO	NO			NO	Western
DSI	Tugwell	180	NO	NO			NO	Western
DSI	Sooke River	181	YES	YES			NO	Western
DSI	Kemp Creek	182	YES	NO			NO	
DSI	West Mechosin	183	NO	NO			NO	
DSI	East Mechosin	184	NO	NO			NO	
DSI	Goldstream	185	YES	YES			NO	
DSI	Victoria/Saanich	186	NO	NO			NO	
DSI	Johns Creek	187	YES	NO			NO	MoF
DSI	Shawnigan Creek	188	YES	NO			NO	MoF

MoF District	Watershed Name	Watershed Number	Regional Priority for Domestic Water	Regional Priority for Fish	Target Species	Issues	Priority Key Watershed	Implementing Partners
DSI	Koksilah River	189	NO	YES			NO	MoF / TFL
DSI	Cowichan River	190	YES	YES			NO	MoF / TFL
DSI	Cowichan Lake	191	YES	YES			NO	
DSI	Chemainus River	192	YES	YES			NO	MoF
DSI	Sansum Narrows	193	NO	NO			NO	
DSI	Duncan	194	NO	NO			NO	
DSI	Stuart Channel	195	YES	NO			NO	
DSI	Ladysmith	196	YES	NO			NO	MoF
DSI	Haslam Creek	197	NO	NO			NO	TFL
DSI	Nanaimo River	198	YES	YES			NO	
DSI	Chase River	199	NO	NO			NO	TFL
DSI	Brennen Lake	200	NO	NO			NO	MoF
DSI	Lantzville	201	YES	NO			NO	MoF
DSI	Bonell Creek	202	YES	YES			NO	MoF
DSI	Englishman River	203	YES	NO		Provincial Park	NO	
DSI	Nanoose Creek	204	NO	YES			NO	
DSI	French Creek	205	YES	YES			NO	MoF
DSI	Little Qualicum River	206	YES	YES		Provincial Park	NO	MoF
DSI	Cameron River	207	YES	YES		Provincial Park	NO	Weyerhaeuser
DSI	Walbran Creek	208	NO	NO			NO	TFL / Weyerhaeuser
DSI	Camper Creek	209	NO	NO			NO	TFL / Weyerhaeuser
DSI	Caycuse River	210	NO	YES			YES	TFL / Weyerhaeuser
DSI	Carmanah Creek	211	NO	NO			NO	Weyerhaeuser
DSI	Nitinat River	212	YES	YES			YES	Weyerhaeuser / TFL
DSI	Nitinat Lake	213	NO	YES			YES	Weyerhaeuser / TFL
DSI	Tsusiat River	214	NO	NO			NO	
DSI	Klanawa/Darling	215	NO	YES			YES	Weyerhaeuser
DSI	Sarita	216	NO	YES			YES	Weyerhaeuser
DSI	Franklin/Corrigan	217	NO	NO			NO	Weyerhaeuser
DSI	Stamp River	218	YES	YES		Provincial Park	YES	Weyerhaeuser
DSI	Qualicum River	219	NO	YES		Provincial Park	NO	MoF
DSI	Nile Creek	220	YES	NO			NO	MoF
DSI	Rosewall Creek	221	NO	NO		Provincial Park	NO	MoF
DSI	Tsable/Wilfred	222	NO	NO			NO	MoF
DSI	Ash River	223	YES	YES		Provincial Park	NO	Weyerhaeuser
DSI	Great Central Lake	224	YES	YES		Provincial Park	YES	Weyerhaeuser
DSI	Sproat Lake	225	YES	YES		Provincial Park	YES	Weyerhaeuser
DSI	Bedwell River	226	NO	YES		Provincial Park	NO	Weyerhaeuser
DSI	Moyeha River	227	NO	NO		Provincial Park	NO	
DSI	Megin River	228	NO	YES			NO	Weyerhaeuser
DSI	Mt. Bourke	229	NO	NO			NO	Interfor
DSI	Sydney River	230	NO	YES		Provincial Park	NO	Interfor
DSI	Mooyah River	231	NO	YES			YES	Interfor
DSI	Escalante River	232	NO	NO			NO	Interfor
DSI	Hesquiate Penninsula	233	NO	NO		Provincial Park	NO	
DSI	Hesquiate Lake	234	NO	YES			YES	MoF
DSI	Rondeault Point	235	NO	NO			NO	Interfpr

MoF District	Watershed Name	Watershed Number	Regional Priority for Domestic Water	Regional Priority for Fish	Target Species	Issues	Priority Key Watershed	Implementing Partners
DSI	Hot Springs Cove	236	YES	YES		Provincial Park	YES	MoF
DSI	Flores Island	237	YES	NO		Provincial Park	NO	Weyerhaeuser
DSI	Atleo (LU)	238	NO	YES	ST(W), CO		YES	Interfor
DSI	Cypre River	239	NO	YES	ST(W), CO, PK, CH		YES	Weyerhaeuser
DSI	Cotter Creek	240	NO	NO			NO	Interfor
DSI	Matlset	241	NO	NO	ST(W), CO		NO	MoF
DSI	Bulson River	242	NO	NO	ST(W), ST(S), CO, DV, SK, PK, CH, CT, RB		NO	Weyerhaeuser
DSI	Meares Island	243	YES	NO	ST(W)		NO	Interfor
DSI	Rolling Stone	244	NO	NO	CO, CT, ST(W), ST(S)		NO	Weyerhaeuser
DSI	Tranquil Creek	245	NO	NO	CH, CHI, CO, PK, SCT, SDV		NO	Weyerhaeuser
DSI	Tofino Creek	246	NO	NO	ST(W), CT		NO	Weyerhaeuser
DSI	Clayoquot River	247	NO	NO			NO	Weyerhaeuser
DSI	Kennedy River	248	NO	YES	CO, CH	Provincial Park	YES	Interfor / Weyerhaeuser
DSI	Kennedy Flats	249	NO	YES	CO, CH, PK, SCT, SDV		YES	Interfor / Weyerhaeuser
DSI	Toquart	250	NO	YES	CT, CH, PK, CO, ST(W)		YES	Weyerhaeuser
DSI	Effingham	251	NO	YES	CH, CO		YES	Weyerhaeuser
DSI	Henderson	252	NO	YES	ST(W), PK		YES	Weyerhaeuser
DSI	Nahmint	253	NO	YES	ST(W), CO, CHI		NO	Weyerhaeuser
DSQ	Ashlu Creek	254	NO	YES	CO, CT, RB, ST(W)		YES	Interfor
DSQ	Cheakamus River	255	YES	YES	PK, CH, CHI		NO	MoF
DSQ	Brandywine River	256	NO	NO	CO, CH, CHI, ST(W)		NO	Western
DSQ	Callaghan River	257	NO	NO	CO, CH		NO	Western
DSQ	Cheekeye River	258	NO	NO	CO, ST(W), CHI		NO	MoF
DSQ	Culliton Creek	259	NO	NO	CO, CH, PK, ST(W), SDV		NO	MoF / Western
DSQ	Pilchuk Creek	260	NO	NO	RB		NO	Interfor / Terminal
DSQ	Elaho River	261	NO	NO	CO, CH, SCT, SDV		NO	Interfor
DSQ	Clendenning Creek	262	NO	NO	ST(W), ST(S), CO, DV, SK, PK, CH, CT, RB		NO	Interfor
DSQ	Sims Creek	263	NO	NO	ST(S), ST(W), CO, PK		NO	Interfor
DSQ	Mashiter Creek	264	YES	NO	CO, DV, ST(W), CH, PK, CT,		NO	MoF
DSQ	Mamquam River	265	NO	YES	CH, ST(W)		YES	Weyerhaeuser
DSQ	Squamish River	266	NO	YES	ST(W), ST(S), CO, DV, SK, PK, CH, CT, RB		YES	Interfor
DSQ	Fire Creek	267	NO	NO	CO, PK, CH, ST(S), CT, DV		NO	Squamish Mills
DSQ	Sloquet Creek	268	NO	NO	ST(W), CO, PK, CH		NO	Canfor
DSQ	Douglas Creek	269	NO	NO	ST(W), ST(S)		NO	Interfor
DSQ	Gowan Creek	270	NO	NO	CO, PK, ST(W)		NO	Interfor
DSQ	Rogers Creek	271	NO	NO			NO	Interfor
DSQ	Lizzie Creek	272	NO	NO	ST(S), ST(W)		NO	Interfor
DSQ	Twin One Creek	273	YES	NO	SK, PK, CHI, CO, CH		YES	Interfor
DSQ	Joffre Creek	274	NO	NO	CH, PK, CO, SCT, SDV		NO	CRB
DSQ	Miller Creek	275	NO	NO	CH, PK, CO		NO	MoF
DSQ	Birkenhead River	276	YES	YES	CO, ST(W), CT, DV		NO	MoF
DSQ	Ryan River	277	NO	NO	CO, SK, DV, CT, ST(S), CHI		NO	Terminal
DSQ	South Creek	278	NO	NO	CO, CT, RB, ST(W)		NO	Terminal
DSQ	Meager Creek	279	NO	NO	CO, CH, SK, ST(S), CT, DV		NO	CRB
DSQ	North Creek	280	NO	NO	CO, DV, ST(S), ST(W), SK, PK, CH, CT, RB		NO	Squamish Mills
DSQ	Rutherford River	281	NO	NO	CH, CHI, CO, PK, SCT, SDV		NO	Western
DSQ	Soo River	282	NO	NO			NO	Richmond Ply

MoF District	Watershed Name	Watershed Number	Regional Priority for Domestic Water	Regional Priority for Fish	Target Species	Issues	Priority Key Watershed	Implementing Partners
DSQ	Green River	283	YES	NO	ST(W), CT, PK		NO	MoF
DSQ	Ure Creek	284	NO	NO	ST(W), CT, CO		NO	Interfor
DSQ	Kakila Creek	285	NO	NO			NO	Canfor
DSQ	Billygoat Creek	286	NO	NO			NO	MoF
DSQ	Tuwasus Creek	287	NO	NO	CO, DV, ST, SK, PK, CH, CT, RB		NO	Canfor / MoF
DSQ	Snowcap Creek	288	NO	NO	CH, CO, ST(W), PK, SCT, SDV		NO	Canfor
DSQ	Britannia Creek	289	NO	NO	SK, CO, CT, DV		NO	Richmond Ply
DSQ	Furry Creek	290	NO	NO	SCT, DV, CO, CH		NO	MoF
DSQ	Deeks Creek	291	NO	NO			NO	Terminal
DSQ	Thistle Creek	293	NO	NO	ST(W), PK, CO, DV, CH		NO	MoF
DSQ	Stawamus River	294	YES	NO	CH, PK, CO, SCT, SDV		YES	MoF
DSQ	Woodfibre Creek	295	NO	NO	CH, PK, CO, CT, ST(W)		NO	Interfor / MoF
DSQ	Shannon Creek	296	NO	NO	ST(W)		NO	MoF
DSQ	Kallahne Creek	297	NO	NO	ST(W), CO		NO	MoF
DSQ	Lions Bay	298	YES	NO	ST(W), CT, PK		NO	Richmond Ply
DSQ	Mill Creek	299	NO	NO	CH, PK		NO	Interfor
DSQ	Upper Lillooet River	300	NO	YES	ST(W), CT, PK		NO	MoF
DSQ	Middle Lillooet River	301	NO	YES	CO, CH, SCT, SDV		NO	CRB
DSQ	Lillooet Lake	302	YES	YES	ST(W), PK, CT		NO	Squamish Mills
DSQ	Lower Lillooet River	303	NO	YES			NO	Canfor/ Interfor
DCR	Apple River	304	NO	NO	SCT, SDV, CO, CH		NO	Western
DCR	Stafford River	305	NO	NO	ST(W), ST(S)		NO	Western
DCR	Frazer River	306	NO	NO	ST(W), DV, CT		NO	Western
DPM	Wakash Creek	307	NO	NO	CO, CHI, DV		NO	
DPM	Blind Creek	308	NO	NO	CO, DV, ST(S), ST(W), SK, PK, CH, CT, RB		NO	
DPM	Millard Creek	309	NO	NO	CH, CHI, CO, PK, SCT, SDV		NO	
DPM	Franklin River	310	NO	NO	CO, PK		NO	Interfor
DPM	Devereaux Creek	311	NO	YES	CO, CH, SCT, SDV		YES	Interfor
DPM	Lower Klinaklini River	312	NO	NO	ST(W), CO, PK		NO	Interfor
DPM	Ahnuhati River	313	NO	NO	SK, PK, CHI, CO, CH		NO	
DPM	Kwalate Creek	314	NO	NO			NO	Interfor
DPM	Sim Creek	315	NO	NO	CHI, RB, CT		NO	Interfor
DPM	West Klinaklini River	316	NO	NO			NO	Interfor
DPM	Atway/Kelesse River	317	NO	NO			NO	Interfor
DPM	Wakeman River	318	NO	NO			NO	Interfor
DPM	Kingcome River	319	YES	NO		Provincial Park	YES	Interfor
DPM	Atlatzi River	320	YES	YES		Provincial Park	YES	Interfor
DPM	Satsalla River	321	YES	NO	CO/SE/CT/ST		NO	Interfor
DPM	Kakweikin River	322	NO	NO			NO	Interfor
DPM	Sallie Creek	323	NO	NO	CO/ST/PK/CM		NO	Interfor
DPM	Matsin Creek	324	NO	NO	CO		NO	
DPM	McAlister Creek	325	NO	NO			NO	Interfor
DPM	Lull Creek	326	NO	NO			NO	Weyerhaeuser
DPM	Seymour River	327	NO	NO			NO	
DCR	Tom Browne Creek	328	NO	NO			NO	TFL
DCR	Read Creek	329	NO	NO		Provincial Park	NO	TFL
DCR	Heydon Creek	330	NO	YES			YES	Western

MoF District	Watershed Name	Watershed Number	Regional Priority for Domestic Water	Regional Priority for Fish	Target Species	Issues	Priority Key Watershed	Implementing Partners
DCR	Wortley Creek	331	NO	NO			NO	TFL
DCR	Fulmore River	332	NO	NO	CO/CT/SE		NO	TFL
DPM	Ahta River	333	NO	NO	CO/CT/SE		NO	
DPM	Miriam	334	NO	NO			NO	
DPM	Charles Creek	335	NO	NO			NO	
DPM	Waymus Creek	336	NO	NO			NO	
DPM	Taatz Creek	337	NO	NO	CO/CT/SE		NO	
DPM	Huaskin Lake	338	NO	NO			NO	
DPM	Gilford Island	339	NO	NO			NO	Interfor
DPM	Broughton Island	340	NO	NO	CO/CT/PK	Provincial Park	NO	
DPM	Woss Lake	341	NO	YES	SK,CH, CO,ST,RB,CT	Provincial Park	YES	Canfor
DPM	Davie River	342	NO	YES	CO,SK,ST,RB,CT	Provincial Park	YES	Canfor
DPM	Maquilla River	344	NO	NO	CO/ST/CM/PK/CT		NO	Canfor
DPM	Kaipit Creek	345	NO	YES	CO/CT/SE		YES	Canfor
DPM	Atluck Creek	346	NO	YES	SK,CH, CO,ST,RB,CT	Provincial Park	YES	Canfor
DPM	Kilpala	347	NO	YES	ST,CO,SK,CH,CT		YES	Canfor
DPM	Middle Nimpkish	348	NO	YES	SK,CH, CO,ST,RB,CT	Provincial Park	YES	Canfor
DPM	Upper Nimpkish	349	NO	YES	SK,CH, CO,ST,RB,CT		YES	Canfor
DPM	Nimpkish Lake	350	NO	YES	CO/CT/SE	Provincial Park	NO	Canfor
DPM	Tsitika River	351	NO	YES		Provincial Park	YES	Canfor / Weyerhaeuser
DCR	Naka Creek	352	NO	NO			NO	Western
DPM	Bonanza Creek	353	NO	YES			YES	TFL
DPM	Kokish River	354	NO	YES	SSH		YES	TFL
DPM	Tsulton River	355	NO	YES	CO,ST,CT		YES	Canfor / TFL
DPM	Kaikash	356	NO	NO	PK, CM		NO	Weyerhaeuser
DPM	Cluxewe River	357	NO	YES			YES	Weyerhaeuser
DPM	Port McNeill	358	NO	NO			NO	
DPM	Waukwaas River	359	NO	YES	PK		YES	Western / Weyerhaeuser
DPM	Marble River	360	NO	YES		Provincial Park	YES	Western / Weyerhaeuser
DPM	Keogh River	361	NO	YES			YES	Western
DPM	Suquash Creek	362	NO	NO			NO	Western
DPM	Benson River	363	NO	YES			YES	Weyerhaeuser
DPM	Colonial	364	NO	YES	PK, CM		YES	Western
DPM	Neroutsos North	365	NO	NO			NO	Western
DPM	Neroutsos South	366	NO	NO			NO	Western
DPM	Klaskish	367	NO	NO		Provincial Park	NO	Interfor
DPM	Mahatta Creek	368	NO	YES			YES	Western
DPM	Kewquodie	369	NO	NO			NO	Western
DPM	Brooks	370	NO	NO		Provincial Park	NO	
DPM	Kwakiutl Point	371	NO	NO			NO	Interfor
DPM	Winter Harbour	372	NO	NO			NO	
DPM	Koprino River	373	NO	NO	CO		NO	Western
DPM	Hathaway Creek	374	NO	NO	SSH		NO	Western
DPM	MacJack	375	NO	NO		Provincial Park	NO	Western
DPM	Cape Palmerston	376	NO	NO	CO		NO	
DPM	San Josef	377	NO	NO	CH, CO	Provincial Park	NO	Western
DPM	Goodspeed	378	NO	YES			YES	Western

MoF District	Watershed Name	Watershed Number	Regional Priority for Domestic Water	Regional Priority for Fish	Target Species	Issues	Priority Key Watershed	Implementing Partners
DPM	Wanokana Creek	379	NO	NO			NO	Western
DPM	Quatse River/Booth Creek	380	YES	YES			NO	
DPM	Storey's Beach	381	NO	NO			NO	
DPM	Tsulquate	382	YES	YES	SSH		NO	
DPM	Songhee River	383	NO	NO			NO	
DPM	Shushartie River	384	NO	NO		Provincial Park	NO	
DPM	Nahwitti River	385	NO	NO		Provincial Park	NO	
DPM	Stranby River	386	NO	NO		Provincial Park	NO	Western
DPM	Cape Scott	387	NO	NO	SSH	Provincial Park	NO	Western
DSC	Allaire Creek	388	NO	NO	CO, CO, PK		NO	Interfor
DSC	Bishop River	389	NO	NO			NO	Interfor
DSC	Southgate River	390	NO	NO	PK, CO		NO	Interfor
DSC	Teaquahan River	391	NO	NO			NO	Terminal
DSC	Heakamie River	392	NO	NO			NO	Terminal
DSC	Klattasine River	393	NO	NO	PK, CM		NO	Interfor
DSC	Scar Creek	394	NO	NO	PK		NO	Interfor
DSC	Jones Creek	395	NO	NO			NO	Interfor
DSC	Homathko River	396	NO	YES			YES	Interfor
DSC	Orford River	397	NO	YES			YES	Interfor
DCR	Phillips River	398	NO	YES			YES	Weyerhaeuser
DSC	Bear River	399	NO	NO	unique 3-spined stickleback		NO	Interfor
DSC	Brem River	400	NO	YES			YES	Interfor
DSC	Filer Creek	401	NO	NO			NO	Interfor
DSC	Klite River	402	NO	NO			NO	Interfor
DSC	Little Toba River	403	NO	NO			NO	Interfor
DSC	Toba River	404	NO	YES			NO	Interfor
DSC	Tahumming River	405	NO	NO			NO	Interfor
DSC	Moh Creek	406	NO	NO			NO	Interfor
DSC	Quatam River	407	NO	NO	ST(S), RB, CT		NO	Interfor
DSC	Theodosia/Olsen River	408	NO	YES	ST(W), CT		YES	Weyerhaeuser
DSC	Daniels River	409	NO	NO	ST(W), ST(S), CHI, CO		NO	Weyerhaeuser
DSC	Eldred River	410	NO	NO	CH, CO, CT, ST(W), LC		NO	Weyerhaeuser
DSC	Powell River	411	NO	NO	SCT		NO	Weyerhaeuser
DSC	Freda Creek	412	NO	NO	SCT, ST(S), RB, CT		NO	Weyerhaeuser
DSC	Lois River	413	NO	NO	CO, CH, SCT		NO	Weyerhaeuser
DSC	Texada Island	414	YES	NO	BT, CT, RB		NO	
DSC	Brittain River	415	NO	NO	CO, PK, CH, RB, CT, ST(W), ST(S)		NO	SBFEP
DSC	Deserted River	416	NO	YES	ST(W), CO, CHI		NO	SBFEP
DSC	Hunaechin Creek	417	NO	NO	SK, CH, CHI, CO, ST(W), ST(S), RB, CT, BT, KO		NO	Interfor
DSC	Stakawus Creek	418	NO	NO	ST(W), ST(S), CT		NO	Interfor
DSC	Vancouver River	419	NO	YES	ST(W), CO		YES	Interfor
DSC	High Creek	420	NO	NO			NO	Interfor
DSC	Tzoonie River	421	NO	YES	SCT,CT, DV, CO, CH		YES	Interfor
DSC	Clowhom River	422	NO	NO			NO	Interfor
DSC	Lang Creek	423	YES	YES	CT, BT		YES	Western / Weyerhaeuser
DSC	Skwawka River	424	NO	YES	ST(W), CT, BT, CH, RB, CHI		YES	Interfor
DSC	Sechelt Creek	425	NO	NO	CH, CHI, CO, DV, RB, CT		NO	Canfor

MoF District	Watershed Name	Watershed Number	Regional Priority for Domestic Water	Regional Priority for Fish	Target Species	Issues	Priority Key Watershed	Implementing Partners
DSC	Thornhill Creek	426	NO	NO	CT, SCT, CO, CH		NO	Canfor
DSC	Potlatch Creek	427	NO	NO	RB		NO	Canfor
DSC	McNab Creek	428	NO	NO	ST(W), CT		NO	Canfor
DSC	Misery Creek	429	NO	NO	ST(W), CT		NO	Terminal
DSC	Rainy River	430	NO	NO	ST(W), CHI, CO, CH		NO	Canfor
DSC	McNair Creek	431	YES	NO	SCT,CT, DV, CO, CH		YES	Canfor
DSC	Wilson Creek	432	NO	NO	ST(W), CHI, CT		NO	Canfor
DSC	Chapman Creek	433	YES	NO	ST(W), CT		YES	Interfor
DSC	Gray Creek	434	YES	YES	ST(W), CO, CH, CHI, SCT		YES	Interfor
DSC	Earle Creek	435	NO	NO	ST(S), ST(W), CT, CO		NO	Western
DSC	Sechelt Penninsula	436	NO	NO	SCT, CO, CH		NO	Terminal
DSC	Murtle Creek	437	NO	YES	SK, CO, CT, ST(W), ST(S)		NO	
DSC	Seshal Creek	438	NO	NO	CT, RB, SCT		NO	Interfor
DSC	Perkett Creek	439	NO	NO	SK, CH, CHI, CO, ST(W), CT, DV		NO	Interfor
DSC	Treat Creek	440	NO	NO	salmon, trout		NO	Interfor
DSC	Narrows Inlet	441	NO	NO	CO, SK, CHI, CH, ST(W)		NO	Interfor
DSC	Sliammon Lake	442	YES	NO	SK, CO, CT, DV		NO	SBFEP
DMC	Neechantz River	443	NO	YES	CH, CO, SCT		NO	Western
DMC	Machmell River	444	NO	YES	ST(W), CH, RB		YES	Western
DMC	Sheemahant River	445	NO	YES	SCT, CO		YES	Western
DMC	Lemolo Creek	446	NO	NO	CO, SCT, CT, CH, SK, PK		NO	Western
DMC	Talchako River	447	YES	NO	SK, CO, CH, ST(W), CT, CHI, PK		YES	Interfor
DMC	Noomst Creek	448	YES	NO	ST(W), SCT, CT, CO, CH		YES	Interfor
DMC	Nusatsum River	449	YES	YES	ST(W), ST(S), CO, CH, CHI		YES	Interfor
DMC	Nooklikonnik Creek	450	NO	YES	ST(W), CT, BT, CH, RB, CHI		YES	Interfor
DMC	Snootli Creek	451	NO	YES	CT, RB, ST(W)		NO	
DMC	Thorsen Creek	452	NO	NO	SCT		NO	MoF
DMC	Smitley Creek	453	NO	NO	BT, ST(W), CO, CHI, CH		NO	Interfor
DMC	Noeick Creek	454	NO	NO	CH, CO, CT, ST(W), LC		NO	Interfor
DMC	Taleomy River	455	NO	NO	CH, CHI, CO, DV, RB, CT		NO	Interfor
DMC	Asseek River	456	NO	YES	SCT,CT, DV, CO, CH		YES	Interfor
DMC	Washwash River	457	NO	YES	ST(W), ST(S), CO		NO	
DMC	Inziana River	458	NO	YES	CH, CHI, SK, CO, SDV, ST(W+S), SCT, CT		NO	Interfor
DMC	Kwatna River	459	NO	YES	ST(W), ST(S), CHI, CO		YES	Interfor
DMC	Chuckwalla River	460	NO	YES	SCT, ST(S), ST(W)		YES	Western
DMC	Kilbella River	461	NO	YES	SCT, CO, ST(W), CHI, CH		YES	Western
DMC	Clyak River	462	NO	YES	ST(W), ST(S), CHI		YES	Interfor
DMC	Ickna River	463	NO	NO	CT, ST(W), CHI, CO, RB		NO	
DMC	Tzeo River	464	NO	YES	SCT, RB		NO	
DMC	Hot Springs Creek	465	NO	NO	SCT		NO	Interfor
DMC	Thowals	466	NO	NO	CO, PK, CHI, ST(W)		NO	
DMC	Doc	467	NO	NO	CT, CHI, CO, ST(W), ST(S)		NO	Weyerhaeuser
DMC	Nootum River	468	NO	NO	SK, CH, CHI, CO, ST(W), ST(S), RB, CT, BT, KO		NO	Weyerhaeuser
DMC	Milton,Inrig	469	NO	NO			NO	Western
DMC	Koeye River	470	NO	YES	ST(W), BT, CO, CHI		NO	Weyerhaeuser
DMC	Sowick	472	NO	NO	CO, CHI, ST(W)		NO	
DCR	Piper River	473	NO	NO			NO	Western

MoF District	Watershed Name	Watershed Number	Regional Priority for Domestic Water	Regional Priority for Fish	Target Species	Issues	Priority Key Watershed	Implementing Partners
DMC	Smokehouse Creek	474	NO	YES	ST(W), ST(S), CT, CO		NO	
DMC	Nicknaqueet	475	NO	NO	ST(W), ST(S), CHI, CT		NO	MoF
DMC	Clayton Falls Creek	476	NO	NO	CT, CO		NO	Interfor
DMC	Tatsquan	477	NO	YES	CH, CO, CT, ST(W), LC		NO	
DMC	Nieimiammus	478	NO	NO	ST(W), CHI, CO, SCT, CH		NO	Interfor
DMC	Nooseck River	479	NO	NO	SK, CO, CH, CT, White Sturgeon, ST(W), ST(S)		NO	Interfor
DMC	Necleetsconnay River	480	NO	NO	ST(W), ST(S), CT, White Sturgeon		NO	Interfor
DMC	Salloomt River	481	NO	YES	ST(W)		YES	Interfor
DMC	Tseapseahoolz Creek	482	NO	NO	ST(W), CT		NO	Interfor
DMC	Noosgulch River	483	NO	NO	ST(S), ST(W), CO		NO	Interfor
DMC	Jump Across Creek	484	NO	NO	ST(W), CT		NO	
DMC	Humpback Creek	485	NO	NO	ST(W)		NO	
DMC	Swallop Creek	486	NO	NO	SK, CT, CO		NO	
DMC	Sutslem Creek	487	NO	NO	CT, CO, ST(W)		NO	
DMC	Sakumtha River	488	NO	NO	SCT, RB, SMB		NO	
DMC	Kimsquit River	489	NO	YES	ST(W), RB, CHI		YES	MoF
DMC	King George Creek	490	NO	NO	RB		NO	
DMC	Campbell Island	491	YES	NO	CT, SCT, CO, CH		NO	Western
DMC	Bella Colla River	492	NO	YES	CT, SCT, CO, CH		YES	Interfor
DMC	Young Creek	493	NO	NO	BT, CH		NO	Interfor
DMC	Roscoe Creek	494	NO	YES			NO	
DMC	Link River	495	NO	NO	SK		NO	
DMC	Martin River	496	NO	NO			NO	
DMC	Clatse Creek	497	NO	YES			NO	
DMC	Ellerslie Creek	498	NO	NO			NO	
DMC	Mooto Creek	499	NO	NO	PK		NO	
DMC	McPherson Creek	500	NO	NO	SH, CO		NO	
DMC	Tankleah R./Cheenis Lake	501	NO	YES			YES	Western
DMC	Pooley Island	502	NO	NO			NO	
DMC	Cascade	503	NO	YES			NO	
DMC	Snowquiltz River	504	NO	NO			NO	
DMC	Nuash Creek	505	NO	NO			NO	
DMC	White Cliff Point	506	NO	NO			NO	
DMC	Labouchere Channel East	507	NO	NO			NO	Interfor
DMC	King Island	508	NO	NO			NO	Interfor
DMC	Dean River	509	NO	YES			YES	Western
DMC	Bernhardt Creek	510	NO	NO			NO	
DMC	Bottleneck Creek	511	NO	NO			NO	
DMC	Sigutlat Lake	512	NO	NO			NO	
DMC	Atnarko River	513	NO	YES	BT, DV		NO	
DPM	North Klinaklina River	514	NO	NO			NO	Interfor
DMC	Takia River	515	NO	NO	CO		NO	
DMC	Rainbow	516	NO	NO			NO	
DMC	Nacall River	517	NO	NO			NO	
DMC	Doos Creek	518	NO	YES			NO	
DMC	Dallery Creek	519	NO	YES			NO	Interfor
DMC	Sandell River	520	NO	NO	BT, SK		NO	Interfor

MoF District	Watershed Name	Watershed Number	Regional Priority for Domestic Water	Regional Priority for Fish	Target Species	Issues	Priority Key Watershed	Implementing Partners
DMC	Allard Creek	521	NO	NO			NO	Interfor
DCR	Eliza	522	NO	NO			NO	Western
DCR	Narrowgut	523	NO	NO	BT, SK		NO	Interfor
DCR	Kaouk River	524	NO	YES	BT, SK		NO	
DCR	Artlish River	525	NO	YES		Provincial Park	YES	Canfor / TFL
DCR	Kauwinch River	526	NO	NO	BT		NO	Interfor
DCR	Malkslope/Power/Kashutl	527	NO	NO	BT, SK		NO	Interfor
DCR	Kyuquot	528	NO	NO			NO	Interfor
DCR	Nasparti	529	NO	NO		Provincial Park	NO	Interfor
DPM	Upper Klinaklin River	530	NO	NO			NO	Interfor
DCR	Tashish	531	NO	YES			YES	Canfor
DSI	Cous Creek	532	NO	NO			NO	Weyerhaeuser
DSI	Pachena River	533	NO	NO			NO	Weyerhaeuser
DSI	Cobble Hill	534	NO	NO			NO	
DSI	Indian Bay	535	NO	NO			NO	
DCR	Haana Channel	536	NO	NO			NO	
DPM	Pink Creek	537	YES	NO	CO,PK,RB,CT		YES	Canfor
DMC	Nekite River	539	NO	YES			YES	
DMC	Owikeno Lake	540	NO	YES	BT		NO	
DMC	Quatlena River	541	NO	NO			NO	Interfor
DMC	Ashlulm Creek	542	NO	YES			NO	
DSQ	Gates	544	NO	YES			NO	Interfor / MoF
DSQ	Spruce	545	YES	NO			NO	MoF
DSQ	Haylmore	546	NO	NO	BT, SH		NO	MoF
DCK	Deroche	547	YES	NO			YES	Canfor
DCK	Bridal Falls	548	NO	NO			NO	Fraser Cartel
DSC	Haslam Creek	549	YES	NO			YES	Interfor
DCR	Johnstone Straight	550	NO	NO			NO	TFL
DPM	Queen Charlotte Straight	551	NO	NO			NO	

Appendix D – Table 4: Works Status by Watershed

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MoF District	Watershed Number	Name of Watershed	Watershed Transitional	Name of Sub-basin	Overview Assessements			Restoration		Prescriptions			Works			Routine Effectiveness		
					Up Slope	Riparian	In Stream	Interm	Full	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream
DCR	1	Adam River	yes	Upper Adam	C	C				O			O			P		
DCR	1	Adam River	yes	Lower Adam	C	C				O			O			P		
DCR	2	Eve River	no	KunnumCreek	C	C	C			C	P	C	P	C	C	O		
DCR	2	Eve River	no	Main Stem	C	C	C			C	C	P	C		P	O	O	O
DCR	2	Eve River	no	Tlatlos Creek	C	C	P			C	P	P	P	P	P	O		
DPM	3	Vernon Lake	no	Vernon Lake	C	O	C			C	O	O	O	O	O	P		O
DCR	4	Houston River	no															
DCR	6	Burman River	no															
DCR	7	Jacklah River	no															
DCR	8	Machley Creek	no															
DCR	9	Buttle	no															
DCR	10	Muchalat	no	Muchalat	C	P	C		P	C	P	C	O	P	O	P	P	O
DCR	11	Upana	no	Upana	C		C			C			O			P		
DCR	12	Ucona	no	Ucona	C	P	P			C	P	P	P	P	P	P	P	P
DCR	13	Gold	no	Gold	C	P	P			C			C			O		
DCR	14	Silverado	no															
DCR	15	Elk River	no															
DCR	16	Upper Campbell River	no															
DCR	17	Heber River	no	TFL						C			C					
DCR	17	Heber River	no	Western	P	P	P			P	P	P						
DCR	18	Memakay River	no	Former Main						C						O		
DCR	18	Memakay River	no	Main Stem	P	P	P			P	P	P	P	P	P			
DCR	19	Grilse Creek	no	Grilse Creek	O	O	O		O	O	O	O	O	O	O	P		P
DCR	20	Bigtree Creek	no	Big Tree	C	C				C	P		C	O		O		
DCR	20	Bigtree Creek	no	Spirit	O	P	P			O	P	P	O	P	P	O		P
DCR	21	Upper Salmon River	no	Upper Salmon River	P	P	C			P	C	C	P	O	P			
DCR	22	Lower Salmon River	no	Mayne Creek	C					C			O			O		
DCR	22	Lower Salmon River	no	Keys Creek	C					C			O			O		
DCR	22	Lower Salmon River	no	Stowe Creek	C					C			O			O		
DCR	22	Lower Salmon River	no	Dalrymple Cr.	C					C			O			O		
DCR	22	Lower Salmon River	no	Canyon Cr.	P					P			O			O		
DCR	23	White River	no	White River	C	C	P			O	C	P	O	O	P	O		
DCR	24	Quadra Island	no	Quadra Island						C			O					
DCR	25	Sonora Island	yes	Sonora Island	C					C			O					
DCR	26	East Thurlow Island	no							C			C					
DCR	27	West Thurlow Island	no	West Thurlow Island						C			C					
DCR	28	Hardwicke Island	yes	Hardwicke Island						C			C			O		
DCR	29	Mohun Creek	no															
DCR	30	Pye Creek	no															
DCR	31	Menzies Creek	no															
DCR	32	Amor de Cosmos Creek	no															
DCR	33	Elk Bay Face Unit	no															
DCR	34	Sayward Face	no	Sayward Face	P					P								
DCR	35	Kelsey Bay Face Unit	yes	M20 System	C					C			O			O		
DCR	36	Lower Campbell River	no	Lower Campbell River											O			
DCR	37	Quinsam River	no															
DCR	38	Simms Face	no															
DCR	39	Oyster River	no	Oyster River											O			
DCR	40	Black Creek	no															
DCR	41	Tsolum River	no															
DCR	42	Little River Face	no															
DCR	43	Puntledge River	no															
DCR	44	Trent River	no															
DCR	45	Bligh Island	no															
DCR	46	Gore Island	no															
DCR	47	Kleeptee Creek	no		O													
DCR	48	McCurdy Creek	no															
DCR	49	Tlupana River	no	Tlupana River	P	P	P			P	P	P	P	P	P	P	P	P

MoF District	Watershed Number	Name of Watershed	Watershed Transitional	Name of Sub-basin	Overview Assessments			Restoration		Prescriptions			Works			Routine Effectiveness		
					Up Slope	Riparian	In Stream	Interm	Full	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream
DCR	50	Conuma River	no	Conuma River	C	P	P			P	P	P	P	P	P	P		
DCR	51	Sucwoa River	no															
DCR	52	Nootka Island	no	Brodick	C					C			C			O		
DCR	52	Nootka Island	no	Crawfish	C					O			C			O		
DCR	52	Nootka Island	no	Other	C					O			P			P		
DCR	53	Tahsis River	no	Tahsis River	P	P	P			P	P	P	P	P	P	P	P	P
DCR	54	Leiner/Perry River	no	Leiner/Perry River	P	P	P			P	P	P	P	P	P	P	P	P
DCR	55	Deserted Lake	no															
DCR	56	Hisnit Inlet	no	Hisnit Inlet	O													
DCR	57	Tsowwin River	no	Tsowwin River	C	P	P			C	P	P	O	P	P	O	P	P
DCR	58	Tahsis Inlet	no	Tahsis Inlet	P	P	P			P	P	P	P	P	P	P	P	P
DCR	59	Canton	no															
DCR	60	Little Zaballos River	yes	Little Zaballos River	C		C			C		C	O	C				
DCR	61	Zeballos River	no	Zeballos River	C		C		P	C		C	C		O	P		O
DCR	62	Lutes Creek	no															
DCR	63	Espinosa	no															
DCK	64	Airplane/Foley	no	Airplane/Foley	C		C			O			P		C			
DCK	65	Borden Creek	yes	Borden Creek	C					C			C					
DCK	66	Centre Creek	yes	Centre Creek	C					O			O					
DCK	67	Chipmunk Creek	no	Chipmunk Creek	C													
DCK	68	Nesakwatch Creek	no	Nesakwatch Creek	C						P							
DCK	69	Paleface Creek	no	Paleface Creek	C													
DCK	70	Post Creek	no															
DCK	71	Slesse Creek	no	Slesse Creek	C	C	C			C	C	C	C	O	C			
DCK	72	Tamihi Creek	yes	Tamihi Creek	C					C			C					
DCK	73	Yola/Cantelon Creeks	no	Yola/Cantelon Creeks	P					P			P					
DCK	74	Silverhope Creek	no	Silverhope Creek	P	C				P	O	P	O	O	P			
DCK	75	Klesilkwa River	no															
DCK	76	Sumallo/Twenty Mile Creeks	no															
DCK	77	Skagit River	no															
DCK	78	Sowoqua Creek	yes	Sowoqua Creek	C		C			C			O			P		
DCK	79	Dewdney Creek	no															
DCK	80	Deneau Creek	yes	Deneau Creek	C					C			C					
DCK	81	Ladner Creek	yes	Ladner Creek	C					C			C					
DCK	82	Coquihalla River	no	Coquihalla River		C									O			
DCK	83	Anderson River	no															
DCK	84	Ainslie River	no															
DCK	85	Siwash Creek	no															
DCK	86	Spuzzum Creek	no	Spuzzum Creek	C	C	C			C			C			P		
DCK	87	Tsileuh Creek	no															
DCK	88	Scuzzy Creek	no	Scuzzy Creek	C	C				C			C					
DCK	89	Nahatlatch River	no	Nahatlatch River	C	O	C			C	O	O	O		O			
DCK	90	Big Silver Creek	no				O					O			O			
DCK	91	Hornet/Clear Creeks	yes	Hornet/Clear Creeks	C					C			O			P		
DCK	92	Chehalis River	no	Chehalis River	P		C				C	C		O	O			
DCK	93	Cogburn/Talc Creeks	no	Cogburn/Talc Creeks	C	C	C			P								
DCK	94	Harrison River	no	Squakum/Sasin	C					C			C					
DCK	95	Weaver Creek	no															
DCK	96	Norrish Creek	no	Norrish Creek	C	C	C			O	C		O	O		P		
DCK	96	Norrish Creek	no	Dickson Creek						C			C			O		
DCK	96	Norrish Creek	no	Rose Creek						C			O			P		
DCK	96	Norrish Creek	no	Cyr Creek						C			O			P		
DCK	96	Norrish Creek	no	Hanson Creek						C			O			O		
DCK	96	Norrish Creek	no	West Fork						P								
DCK	96	Norrish Creek	no															
DCK	97	Cascade Creek	no	Cascade Creek	C					P			P					
DCK	98	Winslow/George Good Creeks	no															
DCK	99	Stave River	no															
DCK	100	Corbold Creek	no	Corbold Creek						P								

MoF District	Watershed Number	Name of Watershed	Watershed Transitional	Name of Sub-basin	Overview Assessments			Restoration		Prescriptions			Works			Routine Effectiveness		
					Up Slope	Riparian	In Stream	Interm	Full	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream
DCK	101	Fish Hatchery Creek	no	Fish Hatchery Creek								C			C			
DCK	102	Boise Creek	no															
DCK	103	Gurney Creek	no															
DCK	104	Alouette River	no															
DCK	105	Pitt Lake	no															
DCK	106	Upper Pitt River	no	Upper Pitt River	P	C	C			P	C	C		C				
DCK	107	Or Creek	no	Or Creek	C	C	C				C			C	O			
DCK	108	Coquitlam River	no	Coquitlam River											C			
DCK	109	Chilliwack River	no	Chilliwack River		C				O	O	O		P	O			
DSQ	110	Indian River	no	Indian River	C	C	O			O	O		O	O	O	O	O	
DCK	111	Seymour River	no															
DCK	112	Lynn Creek	no															
DCK	113	Capilano River	no															
DCK	114	Serpentine River	no															
DCK	115	Nikomekl River	no															
DCK	116	Salmon River	no															
DCK	117	Brunette River	no															
DCK	118	Haztic Lake	no															
DCK	119	Kookipi Creek	no															
DCK	120	Log Creek	no	Log Creek	C					O			O					
DCK	121	Mehatl River	no															
DCK	122	Mowhokum Creek	no															
DCK	123	Wahleach Creek	no	Wahleach Creek	C	C				C	C		C		C	P		
DCK	124	Hicks Creek	no	Hicks Creek	C					C	P	P	C	O	P			
DCK	125	Yorkson Creek	no															
DCK	126	Frost Creek	no															
DCK	127	Boston Bar Creek	no	Boston Bar Creek	C					C			C					
DCK	128	Liumchen Creek	no	Liumchen Creek	C													
DCK	129	Ruby Creek	no															
DCK	130	Emory Creek	no															
DCK	131	Yale Creek	no															
DCK	132	Campbell Creek	no															
DCK	133	Fishtrap Creek	no															
DCK	134	McLennan Creek	no															
DCK	135	Nathan Creek	no															
DCK	136	Hannah Creek	no															
DCK	137	Sumas River	no															
DQC	138	Massett	no	Massett	C					O	O	P	P	P	P			
DQC	138	Massett	no	Mamin	C	O	C		P		O	O	O	P	P	P		P
DQC	139	Yakoun	no	Yakoun	C	O	C		P	C	P	O	C	P	O	P		P
DQC	140	Alliford	yes	Alliford	C					C			O			P		
DQC	141	Louise	no	Louise	C	O	O		P	C	O	O	C	O	O	O	P	P
DQC	142	Naden	no	Naden	C	C	C		P	C	C	O	O	P	O	O	P	P
DQC	143	Cave	no	Cave	C	P	P			O	P	P	O	P	P	P	P	P
DQC	144	Tartu	yes	Tartu	C	C	C			C	O	O	C	O	O	P	P	P
DQC	145	Rennell	no	Rennell	C	C	C			C	O	O	C	O	P	O		
DQC	146	Honna	no	Honna	C					C			P			P		
DQC	147	Tarundl	no	Tarundl	C					C			C			O		
DQC	148	Chinukundl	yes	Chinukundl	C					C			C			O		
DQC	149	Deena	no	Deena	O		C		P	P	O	O	P	O	O	P	O	O
DQC	149	Deena	no	Weeping Willie											O			O
DQC	150	Copper	no	Western	C		C			C			O			P		
DQC	150	Copper	no	JS Jones	O		C			P	O	O	P	O	O	P	P	P
DQC	150	Copper	no	JS Jones Blaine Creek			P					P						
DQC	151	Pallant	no	Pallant	C					C			C			P		
DQC	152	Tasu	no	Wilson	C				P	C			O			O		
DQC	152	Tasu	no		C				P	C		O	O		O	O		O
DQC	153	Sewell	no	Big Goose	C	O	C		P	C		O	C	P	P	P		O
DQC	153	Sewell	no	Talunkwan	C		C			C		C	C			P		O

MoF District	Watershed Number	Name of Watershed	Watershed Transitional	Name of Sub-basin	Overview Assessments			Restoration		Prescriptions			Works			Routine Effectiveness		
					Up Slope	Riparian	In Stream	Interm	Full	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream
DQC	153	Sewell	no	Little Goose	C		O		P	C	C	O	C	P	O	O	P	O
DQC	153	Sewell	no	Clint	C		O		P	C		O	C	P	P	O	P	P
DQC	153	Sewell	no	Thorsen	C		O		P	C		O	C	P	O	O	P	O
DQC	153	Sewell	no	North Crescent	C		C		P	C			C			P		
DQC	153	Sewell	no	Sewell Point	C		C		P	C			C			P		
DQC	153	Sewell	no	South Crescent	C				P	C			C			P		
DQC	153	Sewell	no	Flat	C		C		P	C	O	O	P		P	P		P
DQC	153	Sewell	no	Lagoon	C	O	C		P		C	P	P				P	
DQC	153	Sewell	no	Dump	C				P				P			P		
DQC	153	Sewell	no	Edwards	C				P				P			P		
DQC	153	Sewell	no	Crescent	C				P									
DQC	153	Sewell	no	Dana	C				P									
DQC	153	Sewell	no	Dass	C				P									
DQC	153	Sewell	no	Pacofi	C				P									
DQC	153	Sewell	no	Porter	C				P									
DQC	154	Talunkwan	yes	Talunkwan	C					C			C					
DQC	155	Tlell	no	Tlell	C						P			P			P	
DQC	156	Skidegate	no															
DQC	157	Long	no															
DQC	158	Van	no															
DQC	159	Naikoon	no															
DQC	160	Hancock	no															
DQC	161	Jalun	no															
DQC	162	Coates	no															
DQC	163	Cumshewa	no	Cumshewa	P					P			P			P		
DQC	164	Kuper	no	Peel / Braverman	P					P								
DQC	165	Moresby	no															
DQC	166	Langara	no															
DQC	167	Christie	no															
DQC	168	Mayer	no															
DQC	169	Kitgoro	no															
DQC	170	Mercer	no															
DSI	171	Gordon River	no	Gordon River	C	C	C		O	O	O	O	O	O	O	O		
DSI	172	San Juan River	no	San Juan River	O	O	O		O	O	O	O	O	O	O	O		
DSI	173	Sombrio Creek	no	Sombrio Creek	C					C			C			P		
DSI	174	Loss Creek	no	Loss Creek	C					C			C			P		
DSI	175	Bent Creek	no															
DSI	176	Jordan River	no															
DSI	177	Goudie Creek	no															
DSI	178	Kirby	no															
DSI	179	Muir Creek	no															
DSI	180	Tugwell	no															
DSI	181	Sooke River	no															
DSI	182	Kemp Creek	no															
DSI	183	West Mechosin	no															
DSI	184	East Mechosin	no															
DSI	185	Goldstream	no															
DSI	186	Victoria/Saanich	no															
DSI	187	Johns Creek	no															
DSI	188	Shawnigan Creek	no															
DSI	189	Koksilah River	no															
DSI	190	Cowichan River	no															
DSI	191	Cowichan Lake	no															
DSI	192	Chemainus River	no															
DSI	193	Sansum Narrows	no															
DSI	194	Duncan	no															
DSI	195	Stuart Channel	no															
DSI	196	Ladysmith	no															
DSI	197	Haslam Creek	no															

MoF District	Watershed Number	Name of Watershed	Watershed Transitional	Name of Sub-basin	Overview Assessments			Restoration		Prescriptions			Works			Routine Effectiveness		
					Up Slope	Riparian	In Stream	Interm	Full	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream
DSI	198	Nanaimo River	no															
DSI	199	Chase River	no															
DSI	200	Brennen Lake	no															
DSI	201	Lantzville	no															
DSI	202	Bonell Creek	no															
DSI	203	Englishman River	no															
DSI	204	Nanoose Creek	no															
DSI	205	French Creek	no															
DSI	206	Little Qualicum River	no															
DSI	207	Cameron River	no															
DSI	208	Walbran Creek	no															
DSI	209	Camper Creek	no	Camper Creek						C			C					
DSI	210	Caycuse River	no	Weywehaeuser Haddon			C			O		C	O			P		
DSI	210	Caycuse River	no	Caycuse River	C	O	O		O	O	O		O	O	C	P		O
DSI	211	Carmanah Creek	no															
DSI	212	Nitinat River	no	Nitinat River	P					O			O			P		
DSI	212	Nitinat River	no	Little Nitinat	P					P			P			P		
DSI	213	Nitinat Lake	no	Nitinat Lake	P					P			P					
DSI	214	Tsusiat River	no															
DSI	215	Klanawa/Darling	no	West Fork	P	P	C			O		P	O		P	P		P
DSI	215	Klanawa/Darling	no	Darling	P	P	C			O			P			P		
DSI	215	Klanawa/Darling	no	Klanawa	P	P	C			P		P	P		P	P		P
DSI	215	Klanawa/Darling	no	East Fork	P	P	C			P		P	P		P	P		P
DSI	216	Sarita	no	Sarita	C		C			O		O	O		O	P		O
DSI	216	Sarita	no	South Sarita	C		C			O		O	O		O	P		O
DSI	216	Sarita	no	Sabrina	C		C			O		O	O		O	P		O
DSI	216	Sarita	no	Hunter Creek	C		C					O			O			O
DSI	217	Franklin/Corrigan	no															
DSI	218	Stamp River	no	Stamp River			C					C			C			
DSI	219	Qualicum River	no															
DSI	220	Nile Creek	no															
DSI	221	Rosewall Creek	no	Rosewall Creek	C					C			C					
DSI	222	Tsable/Wilfred	no															
DSI	223	Ash River	no															
DSI	224	Great Central Lake	no															
DSI	225	Sproat Lake	no	Taylor River	P		C			O	O	O	O	O	O	P	P	O
DSI	225	Sproat Lake	no	Sproat Lake	P					O			O			P		
DSI	226	Bedwell River	no															
DSI	227	Moyeha River	no															
DSI	228	Megin River	no															
DSI	229	Mt. Bourke	no															
DSI	230	Sydney River	no															
DSI	231	Mooyah River	no	Moyeha River	C		C			O		C	O		O	P		P
DSI	232	Escalante River	no	Escalante River	C					C			C			P		
DSI	233	Hesquiate Penninsula	no															
DSI	234	Hesquiate Lake	no	Hesquiate Lake	C					C		C	P		C	P		
DSI	235	Rondeault Point	no	Rondeault Point	C					C			C			P		
DSI	236	Hot Springs Cove	no	Hot Springs Cove						C			C					
DSI	237	Flores Island	no	Flores Island						C			C					
DSI	238	Atleo (LU)	no	Atleo (LU)	C	C				O	C		P	P				
DSI	239	Cypre River	no	Cypre River	C		C			O	O	O	O	P	O	P	P	O
DSI	240	Cotter Creek	yes	Catface						C			C					
DSI	241	Matlset	no	Matlset						C			C					
DSI	242	Bulson River	yes	Warn Creek						O			O					
DSI	243	Meares Island	no															
DSI	244	Rolling Stone	no	Rolling Stone						C			C					
DSI	245	Tranquil Creek	yes	Tranquil Creek						C			C			P		
DSI	246	Tofino Creek	yes	Marble Creek						C			C			P		
DSI	247	Clayoquot River	no	Clayoquot River						O			O					

MoF District	Watershed Number	Name of Watershed	Watershed Transitional	Name of Sub-basin	Overview Assessments			Restoration		Prescriptions			Works			Routine Effectiveness		
					Up Slope	Riparian	In Stream	Interm	Full	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream
DSI	248	Kennedy River	no	Sand River						C			C			P		
DSI	249	Kennedy Flats	no	Kennedy Flats	C	C	C			C	C	C	C	P	P			
DSI	249	Kennedy Flats	no	Lost Shoe	C		C			C	O	C	C	P	O	P		O
DSI	249	Kennedy Flats	no	Upper Kennedy			C			C		C	C		C			
DSI	249	Kennedy Flats	no	Merchantile			C			C		C	C		C			
DSI	249	Kennedy Flats	no	Baot Launch	C	O	O			C	O	O	C		O	P		O
DSI	249	Kennedy Flats	no	Muriel Ridge						C			C					
DSI	249	Kennedy Flats	no	Little Toquart						C			C					
DSI	249	Kennedy Flats	no	Marion Creek						C			C					
DSI	249	Kennedy Flats	no	MoF Kennedy						C			C					
DSI	250	Toquart	no	Toquart	C					C			C					
DSI	251	Effingham	no	Effingham	O													
DSI	252	Henderson	no	Henderson						C	O		O	O	C	P		
DSI	253	Nahmint	no															
DSQ	254	Ashlu Creek	no	Ashlu Creek	C					O			O	O	O	P		
DSQ	255	Cheakamus River	no												C			
DSQ	256	Brandywine River	yes	Brandywine River	C					C			C			P		
DSQ	257	Callaghan River	no															
DSQ	258	Cheekeye River	no															
DSQ	259	Culliton Creek	no															
DSQ	260	Pilchuk Creek	no															
DSQ	261	Elaho River	no															
DSQ	262	Clendenning Creek	no															
DSQ	263	Sims Creek	no															
DSQ	264	Mashiter Creek	no	Mashiter Creek	C					C			C			P		
DSQ	265	Mamquam River	no	Mamquam River	C	C				C	O		O	O		O	O	
DSQ	266	Squamish River	no	Squamish River	C	C	C			O	O	O	O	O	O	P	O	
DSQ	267	Fire Creek	yes	Fire Creek						C	C		C			P		
DSQ	268	Sloquet Creek	no															
DSQ	269	Douglas Creek	no															
DSQ	270	Gowan Creek	yes	Gowan Creek	C					O			O			P		
DSQ	271	Rogers Creek	no															
DSQ	272	Lizzie Creek	no															
DSQ	273	Twin One Creek	yes	Twin One Creek						C			O			P		
DSQ	274	Joffre Creek	no															
DSQ	275	Miller Creek	no															
DSQ	276	Birkenhead River	no															
DSQ	277	Ryan River	no	Ryan River	C	C	P			O	P	P	P	P	P	P		
DSQ	278	South Creek	no															
DSQ	279	Meager Creek	yes	Meager Creek	C					C			P			O		
DSQ	280	North Creek	no	North Creek	P	P				P	P							
DSQ	281	Rutherford River	yes	Rutherford River	C					C			C			P		
DSQ	282	Soo River	yes	Soo River						C			C			P		
DSQ	283	Green River	no															
DSQ	284	Ure Creek	no															
DSQ	285	Kakila Creek	no															
DSQ	286	Billygoat Creek	no															
DSQ	287	Tuwasus Creek	no															
DSQ	288	Snowcap Creek	no															
DSQ	289	Britannia Creek	no	Britannia Creek	C					C	C		C			P		
DSQ	290	Furry Creek	yes	Furry Creek	C					C			C			O		
DSQ	291	Deeks Creek	no															
DSQ	293	Thistle Creek	no															
DSQ	294	Stawamus Creek	no	Stawamus Creek	C					C			C			O		
DSQ	295	Woodfibre Creek	no															
DSQ	296	Shannon Creek	no															
DSQ	297	Kallahne Creek	yes	Kallahne Creek	C					C			C			O		
DSQ	298	Lions Bay	no															
DSQ	299	Mill Creek	no															

MoF District	Watershed Number	Name of Watershed	Watershed Transitional	Name of Sub-basin	Overview Assessments			Restoration		Prescriptions			Works			Routine Effectiveness		
					Up Slope	Riparian	In Stream	Interm	Full	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream
DSQ	300	Upper Lillooet River	no	Upper Lillooet River	P						P							
DSQ	301	Middle Lillooet River	no	Railroad	O					P	P	O	P		O	P		O
DSQ	302	Lillooet Lake	no	North Lizzie	C					C	C		O			P		
DSQ	303	Lower Lillooet River	no															
DCR	304	Apple River	no	Apple River			C											
DCR	305	Stafford River	no															
DCR	306	Frazer River	no															
DPM	307	Wakash Creek	no															
DPM	308	Blind Creek	no															
DPM	309	Millard Creek	no															
DPM	310	Franklin River	no	Franklin River	C					C			C					
DPM	311	Devereaux Creek	no	Devereaux Creek	C					C			C					
DPM	312	Lower Klinaklini River	no	Lower Klinaklini River	C					C								
DPM	313	Ahnuhati River	no															
DPM	314	Kwalate Creek	no															
DPM	315	Sim Creek	no	Sim Creek	C													
DPM	316	West Klinaklini River	no															
DPM	317	Atway/Kelesse River	no	Atway/Kelesse River	O													
DPM	318	Wakeman River	no	Wakeman River	O													
DPM	319	Kingcome River	no	Kingcome River	O					O								
DPM	320	Atlatzi River	no	Atlatzi River	C		C			C								
DPM	321	Satsalla River	no	Satsalla River	O													
DPM	322	Kakweikin River	no															
DPM	323	Sallie Creek	no	Sallie Creek						C			C					
DCK	324	Matsin Creek	no															
DPM	325	McAlister Creek	no															
DPM	326	Lull Creek	no															
DPM	327	Seymour River	no															
DCR	328	Tom Browne Creek	no	Tom Browne Creek						C			C			O		
DCR	329	Read Creek	yes	Read Creek						C			C					
DCR	330	Heydon Creek	no	Heydon Creek	C					C			C					
DCR	331	Wortley Creek	yes															
DCR	332	Fulmore River	no	Fulmore River						C			C			O		
DPM	333	Ahta River	no															
DPM	334	Miriam	no															
DPM	335	Charles Creek	no															
DCK	336	Waymus Creek	no															
DPM	337	Taatz Creek	no															
DPM	338	Huaskin Lake	no															
DPM	339	Gilford Island	no	Gilford Island	P													
DPM	340	Broughton Island	no															O
DPM	341	Woss Lake	no	Woss Lake	C	O	C			C	P	O	O		O	P		O
DPM	342	Davie River	no	Davie River	C	O	C			C	P	O	O	P	O	P		O
DPM	344	Maquilla River	no	Maquilla River	C	O	C			O	P	O	O	P	O	P		O
DPM	345	Kaipit Creek	no	Kaipit Creek	C	O	C			O		O	O		P	P		
DPM	346	Atluck Creek	no	Atluck Creek	C	O	C			O		O	O		P	P		
DPM	347	Kilpala	no	Kilpala	C	O	C			O		O	O		O	P		O
DPM	348	Middle Nimpkish	no	Middle Nimpk	C	O	C			O	P	O	O	P	O	P		O
DPM	349	Upper Nimpkish	no	Upper Nimpk	C	O	C			O	P	O	O	P	O	P		O
DPM	350	Nimpkish Lake	no	Nimpkish Lake	C	O	C			C			O			P		O
DPM	351	Tsitika River	no	Tsitika River	C		C			C		O	C					
DCR	352	Naka Creek	no	Cedarstadt	C					C			C			O		
DPM	353	Bonanza Creek	no	Bonanza Creek	C	C	C		P	O	O	O	O	P	O	P	P	P
DPM	354	Kokish River	no	Kokish River	C	C	C		P	O	O	O	O	P	P	P	P	P
DPM	355	Tsulton River	no	Tsulton	O	P	O			O	P	P	O		P			P
DPM	356	Kaikash	no															
DPM	357	Cluxewe River	no	Cluxewe River			C			C								
DPM	358	Port McNeill	no															
DPM	359	Waukwaas River	no	Waukwaas River	C		P			P		P	P		P			

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					Up Slope	Riparian	In Stream	Interm	Full	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream
DPM	360	Marble River	no	Victoria East	C	P	C		O	O	O	C	O	P	C	P	P	O
DPM	360	Marble River	no	Victoria West	C	P			O	O	P		O			P		
DPM	360	Marble River	no	Lippy	C	P	C		O		P							
DPM	360	Marble River	no	Narrows	C	P	P		O		P	P			P			P
DPM	360	Marble River	no	Upper Marble	C	P			O	C	P	O	O		O	P		
DPM	360	Marble River	no	Teihsum	C	P			O	O	P		O			P		
DPM	360	Marble River	no	Marble	C	P	P		O	O	O	O	O	O	O			P
DPM	361	Keogh River	no	Keogh River	C	O				C	O	O	O	O	O	P	P	P
DPM	362	Suquash Creek	no															
DPM	363	Benson River	no															
DPM	364	Colonial	no	Colonial	P	O	C		P	P	P	O	P	P	O	P	P	O
DPM	364	Colonial	no	Jeune Landing					P	C			C			P		
DPM	364	Colonail	no	Teeta	C	P	P		P	P	P	P	P	P	P	P	P	P
DPM	364	Colonail	no	Caycuse	P	P	P		P	P	P	P	P	P	P	P	P	P
DPM	364	Colonail	no	Cayeqle	P	P	P		P	P	P		P	P	P	P	P	P
DPM	365	Neroutsos North	no															
DPM	366	Neroutsos South	no															
DPM	367	Klaskish	no	Buck Creek	O	C				O	C		O			P		
DPM	368	Mahatta Creek	no	Mahatta Creek		C			P	C	P	C	P	P	P	P	P	O
DPM	369	Kewquodie	yes	Kewquodi	C					C			C					
DPM	369	Kewquodie	yes	Klootchlimmis								P			P			O
DPM	370	Brooks	no															
DPM	371	Kwakiutl Point	yes	Le Mare	O					O			O			P		
DPM	372	Winter Harbour	no	Winter Harbour	C													
DPM	373	Koprino River	no	Koprino River						C			C			P		
DPM	374	Hathaway Creek	yes	Pegattem	C					C			C			C		
DPM	374	Hathaway Creek	yes															
DPM	375	MacJack	no	MacJack	C													
DPM	376	Cape Palmerston	no															
DPM	377	San Josef	yes	San Josef								C			C			
DPM	378	Goodspeed	no	Goodspeed		C	C		P	O	P	O	O	P	P	P	P	P
DPM	379	Wanokana Creek	yes	Hushamu	C					C			C			C		
DPM	379	Wanokana Creek	yes	Clesklagh	C											C		
DPM	379	Wanokana Creek	yes	Stephens	C													
DPM	379	Wanokana Creek	yes	Washlawlis	C													
DPM	379	Wanokana Creek	yes															
DPM	380	Quatse River/Booth Creek	no		O	O	O											
DPM	381	Storey's Beach	no															
DPM	382	Tsulquate	no															
DPM	383	Songhee River	no															
DPM	384	Shushartie River	no															
DPM	385	Nahwitti River	no	Nahwitti River						C			C			P		
DPM	386	Stranby River	no															
DPM	387	Cape Scott	no															
DSC	388	Allaire Creek	no															
DSC	389	Bishop River	no															
DSC	390	Southgate River	no															
DSC	391	Teaquaham River	no	Teaquaham River						C								
DSC	392	Heakamie River	no															
DSC	393	Klattasine River	no															
DSC	394	Scar Creek	no															
DSC	395	Jones Creek	no															
DSC	396	Homathco River	no															
DSC	397	Orford River	no	Orford River	C	O	O				O	O		O	O			
DCR	398	Phillips River	no	Phillips River	C		C			C			C			P		
DSC	399	Bear River	no															
DSC	400	Brem River	no	Brem River						O			P					
DSC	401	Filer Creek	no															
DSC	402	Klite River	no	Klite River	O													

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DSC	403	Little Toba River	no	Little Toba River	O													
DSC	404	Toba River	no	Toba River	O													
DSC	405	Tahumming River	no	Tahumming River	C					C								
DSC	406	Moh Creek	no															
DSC	407	Quatam River	no	Quatam River	C					O			O					
DSC	408	Theodosia/Olsen River	no	Theodosia/Olsen River	C					C			C	P		P		
DSC	409	Daniels River	yes	Daniels River	C		C			C			P			P		
DSC	410	Eldred River	yes	Eldred River	C	C	C			P			P			P		
DSC	411	Powell River	yes	Powell River	C		C			C			C			P		
DSC	412	Freda Creek	no	Freda Creek	C	P				O	P		P	P		O		
DSC	413	Lois River	yes	Lois River	C					C			O			P		
DSC	414	Texada Island	no															
DSC	415	Brittain River	no															
DSC	416	Deserted River	no															
DSC	417	Hunaechin Creek	no															
DSC	418	Stakawus Creek	no															
DSC	419	Vancouver River	no				O					O			O			
DSC	420	High Creek	no															
DSC	421	Tzoonie River	no	Tzoonie River						C								
DSC	421	Tzoonie River	no	Chickwat						C			O	C	P	P		
DSC	421	Tzoonie River	no	Scrub			O			C		O			P	P		
DSC	422	Clowhom River	no	Clowhom River	O													
DSC	423	Lang Creek	no	Lang Creek	P	P	P			P	O	P	P	O	P			
DSC	424	Skwawka River	no															
DSC	425	Sechelt Creek	yes	Sechelt Creek									O					
DSC	426	Thornhill Creek	no	Thornhill Creek						C								
DSC	427	Pottatch Creek	no	Pottatch Creek						C								
DSC	428	McNab Creek	no	McNab Creek						C								
DSC	429	Misery Creek	no															
DSC	430	Rainy River	no															
DSC	431	McNair Creek	no	McNair Creek					P	C			P					
DSC	432	Wilson Creek	no															
DSC	433	Chapman Creek	no	Chapman Creek					O	O		O	O		C	P		
DSC	434	Gray Creek	no	Gray Creek						O			P			P		
DSC	435	Earle Creek	no															
DSC	436	Sechelt Penninsula	no															
DSC	437	Murtle Creek	no															
DSC	438	Seshal Creek	no	Seshal Creek	C													
DSC	439	Perkett Creek	no	Perkett Creek														
DSC	440	Treat Creek	no	Treat Creek														
DSC	441	Narrows Inlet	yes	Misery					P	C			O			O		
DSC	441	Narrows Inlet	yes	Tough						C								
DSC	442	Sliammon Lake	no															
DMC	443	Neechantz River	no	Neechantz River		P	C			C	P	C		P			P	P
DMC	444	Machmell River	no	Machmell River	C	C	C		P	P	P	O	P	P	O	P	P	P
DMC	445	Sheemahant River	no	Sheemahant River	C	C	C		P	C	P	O	P	P	O	P	P	P
DMC	446	Lemolo Creek	no	Lemolo Creek	C					C								
DMC	447	Talchako River	no	Talchako River	C	C	O		P	C	O	O	C	O	O	O	O	O
DMC	448	Noomst Creek	no	Noomst Creek	C	C	C			O			O					
DMC	449	Nusatsum River	no	Nusatsum River	C	C	C			O			O					
DMC	450	Nooklikonnik Creek	no															
DMC	451	Snootli Creek	no															
DMC	452	Thorsen Creek	no															
DMC	453	Smitley Creek	no	Smitley Creek	P	P	P			P			P					
DMC	454	Noeick Creek	no	Noeick Creek	C					P			P					
DMC	455	Taleomy River	no	Taleomy River	C	C	C	O	P	O	O	O	O	O	O			
DMC	456	Asseek River	no	Asseek River	P	P	P											
DMC	457	Wahwash River	no															
DMC	458	Inziana River	no															

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DMC	459	Kwatna River	no	Kwatna River	C	C	C			O	O	O	O	O	O	O	O	O
DMC	460	Chuckwalla River	no	Chuckwalla River	C	C	C		P	C	P	C	O	P	O	P	P	P
DMC	461	Kilbella River	no	Kilbella River	C	C	C		P	C	P	C	O	P	O	P	P	P
DMC	462	Clyak River	no	Clyak River	P	P	P			P	P	P	P	P	P			
DMC	463	Ickna River	no															
DMC	464	Tzeo River	no															
DMC	465	Hot Springs Creek	no	Hot Springs Creek	C		C											
DMC	466	Thowals	no															
DMC	467	Doc	no															
DMC	468	Nootum River	no				P	O	P	C	O	O	C	P	O	O	O	O
DMC	469	Milton,Inrig	yes	Milton,Inrig	C					C			C			P		
DMC	470	Koeye River	no															
DMC	472	Sowick	no															
DCR	473	Piper River	no	Piper River	C	P	P			P	P	P	P	P	P	P	P	P
DMC	474	Smokehouse Creek	no															
DMC	475	Nicknaqueet	yes	Nicknaqueet	C					C			C					
DMC	476	Clayton Falls Creek	yes	Clayton Falls Creek	O	O	O			O		O	O					
DMC	477	Tatsquan	no															
DMC	478	Nieimiammus	no	Nieimiammus	C	C	C			P								
DMC	479	Nooseck River	no	Nooseck River			C			P		P						
DMC	480	Necleetsconnay River	no	Necleetsconnay River	C	C	C				P	P						
DMC	481	Salloomt River	no	Salloomt River	C	C	C			P	O	O	P		P			
DMC	482	Tseapseahoolz Creek	no	Tseapseahoolz Creek	C	C	C			P								
DMC	483	Noosgulch River	yes	Noosgulch River	C	C	C			O								
DMC	484	Jump Across Creek	no															
DMC	485	Humpback Creek	no															
DMC	486	Swallop Creek	no															
DMC	487	Sutslem Creek	no															
DMC	488	Sakumtha River	no															
DMC	489	Kimsquit River	no	Kimsquit River	C	P	O			C	P	O	C	P	O	P	P	P
DMC	490	King George Creek	no															
DMC	491	Campbell Island	no															
DMC	492	Bella Colla River	no	Bella Colla River	C	C	C			O	O	O	O	O	O	O		O
DMC	493	Young Creek	no															
DMC	494	Roscoe Creek	no															
DMC	495	Link River	no															
DMC	496	Martin River	no															
DMC	497	Clatse Creek	no															
DMC	498	Ellerslie Creek	no															
DMC	499	Mooto Creek	no															
DMC	500	McPherson Creek	no															
DMC	501	Tankleah R./Cheenis Lake	no	Tankleah R./Cheenis Lake			P					P			P			P
DMC	502	Pooley Island	no															
DMC	503	Cascade	no															
DMC	504	Snowquiltz River	no															
DMC	505	Nuash Creek	no															
DMC	506	White Cliff Point	no															
DMC	507	Labouchere Channel East	no															
DMC	508	King Island	no	King Island	P	P	P											
DMC	509	Dean River	no															
DMC	510	Bernhardt Creek	no															
DMC	511	Bottleneck Creek	no															
DMC	512	Sigutlat Lake	no															
DMC	513	Atnarko River	no															
DPM	514	North Klinaklina River	no															
DMC	515	Takia River	no															
DMC	516	Rainbow	no															
DMC	517	Nacall River	no															
DMC	518	Doos Creek	no															

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					Up Slope	Riparian	In Stream	Interm	Full	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream	Up Slope	Riparian	In Stream
DMC	519	Dallery Creek	no	Dallery Creek	P	P	P											
DMC	520	Sandell River	no	Sandell River	P	P	P											
DMC	521	Allard Creek	no	Allard Creek	P	P	P											
DCR	522	Eliza	no															
DCR	523	Narrowgut	no															
DCR	524	Kaouk River	no	Rowland	p					p			p					
DCR	525	Artlish River	no	Artlish River	C					C			C			O		
DCR	526	Kauwinch River	yes	Kauwinch River						C			C					
DCR	527	Malkslope/Power/Kashutl	yes	Malkslope	C					C			C					
DCR	527	Malkslope/Power/Kashutl	yes	Easy Creek							O	O			O			
DCR	528	Kyuquot	yes	Clanninick, Chamiss, Easy, Ououkinsh	O					O			O			O		
DCR	528	Kyuquot	yes	Chamiss	C					O			O			P		
DCR	529	Nasparti	no	Ououkinsh	C					C			C			P		
DPM	530	Upper Klinaklin River	no															
DCR	531	Tashish	no	Sally, Helen Creeks	C					C			C			O		
DSI	532	Cous Creek	yes	Upper Cous						C			C					
DSI	532	Cous Creek	yes	Macktush						C			C					
DSI	533	Pachena River	no	Pachena						C			C					
DSI	534	Cobble Hill	no															
DSI	535	Indian Bay	no															
DCR	536	Haana Channel	no															
DPM	537	Pink Creek	no	Pink	C	P	C			O	P	O	C		O			O
DMC	539	Nekite River	no	Nekite River	P	P	P			P	P	P	P	P	P	P	P	P
DMC	540	Owikeno Lake	no															
DMC	541	Quatlena River	no	Quatlena River	P	P	P											
DMC	542	Ashlulm Creek	no															
DSQ	544	Gates	no															
DSQ	545	Spruce	no		P													
DSQ	546	Haylmore	no															
DCK	547	Deroche	no	Deroche Creek	C					P			P					
DCK	548	Bridal Falls	yes	Bridal Falls	C					C			C					
DSC	549	Haslam Creek	no	Haslam Creek						O			P					

Date	Watershed Number	Watershed Name	Amendment	Initated by
2-Oct-00	152	Tasu	change to priority for fish	Dan Bate
2-Oct-00	153	Sewell	change to priority for fish	Dan Bate
9-Jan-01	425	Schelt Creek	change to transitional	Derrick Harborne
15-Jan-01	293	Thistle Creek	remove transition status	Mike Murrell
15-Jan-01	297	Kallahne Creek	change to a transitional watershed	Mike Murrell
18-Jan-01	66	Centre Creek	change to transitional	Cattermole
18-Jan-01	78	Sowoqua Creek	change to transitionsl	Cattermole
3-Apr-01	215	Klanawa	DFO fish scores amended	Mel Sheng
21-May-01	550	Johnstone Straight Face Unit	new watershed	Jim Dehart
21-May-01	551	Queen Charlotte Straight	new watershed	Jim Dehart
9-Jul-01	273	Twin One Creek	change to Pripity Key	error on last spreadsheet
9-Jul-01	11	Upana	change to transitional	Western

Strengthening Sustainable Forest Management (SSFM)
Part 4 of the
Resource Management Plan
for the Pacific Region

Prepared by the
Pacific Regional Planning Team

(Consisting of the MINISTRY OF FORESTS
MINISTRY OF SUSTAINABLE RESOURCE MANAGEMENT
MINISTRY OF WATER, LAND AND AIR PROTECTION
and INDUSTRY STAKEHOLDERS)

September 30, 2001

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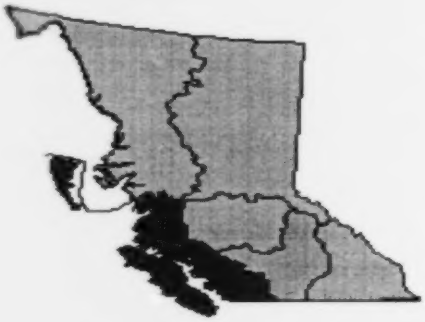
4 STRENGTHENING SUSTAINABLE FOREST MANAGEMENT

4.1 INTRODUCTION AND PLANNING CONTEXT

This section outlines the recommended Pacific Region 2002-2003 Resource Management Plan (RMP) for Strengthening Sustainable Forest Management (SSFM), one of seven Forest Renewal British Columbia (FRBC) Strategic Objectives used in renewing BC's forests and the forest economy. The FRBC Pacific Region covers the Lower Mainland, Vancouver Island, Sunshine Coast, the Mid-Coast, and Queen Charlotte Islands as shown in Figure 1. The Pacific Region is also geographically the same as the Vancouver Region of the Ministry of Sustainable Resource Management, and the Vancouver Forest Region of the Ministry of Forests.

Figure 1. Geographic Location of the Pacific Region



FRBC's SSFM strategic objective is specifically focused on increasing knowledge, techniques and innovations to strategically manage forests according to principles of sustainable forest management (SFM)[1]. Under SSFM, investments will be made in activities that can be used in higher level strategic decisions and planning processes such as Land and Resource Management Plans and Timber Supply Reviews. This document provides a framework for evaluating and recommending specific projects that will create the knowledge needed to address key Regional SFM issues, thereby reducing risk and uncertainty related to two key aspects of sustainable forest management:

- Maintenance of environmental values and
- Sustainable timber and non-timber resource benefits from the forest

Therefore, well-informed decisions supporting SFM at the forest level will benefit FRBC Partners through:

- Greater certainty for harvest levels and other resource uses (e.g., tourism, botanical forest products).
- Reduction of risk which often leads to less conservative and/or more timely decisions.
- Greater success of strategic-level plans which affect long-term sustainability and the effectiveness of operational plans (providing a better overall framework to reference operational decisions).
- A framework for results-based resource management on the landscape.
- Increased capacity to meet certification requirements for SFM.

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[1] SSFM refers to the FRBC strategic objective while SFM refers to the concept of sustainable forest management.

The knowledge will be directly applicable to upcoming forest-level management decisions with an initial focus on implementation of strategic land use plans, timber supply reviews and meeting the requirements of certification.

4.1.1 OVERVIEW OF PLANNING APPROACH

This Resource Management Plan is a collaborative and co-operative submission by the Ministry of Forests (MOF), Ministry of Sustainable Resource Management (MSRM), Ministry of Water, Land, and Air Protection (MWLAP) and Industry Stakeholders. The Regional Planning Team (RPT) consisted of representatives from the MSRM, MWLAP, MOF, FRBC, and International Forest Products (see **Appendix A** for list of participants). An invitation to participate on the RPT was extended to a number of Stakeholders who had participated in the SSFM RMP in past years, but only one stakeholder responded. All activities of the RPT were governed by the Ground Rules (**Appendix B**) that define the general planning framework for SSFM Resource Management Planning in the Pacific Region. The Ground Rules were jointly agreed to and signed by FRBC, MOF, MWLAP and MSRM. The planning process itself involved RPT meetings, telephone calls, and numerous E-mail correspondences (See **Appendix C** for a general schedule of activities). All Strategic Goals were given final approval by the Regional Steering Committee (RSC). The RSC consisted of three Senior Managers from MSRM/MWLAP, MOF, and FRBC.

The 2002-2003 RMP planning process attempted to refocus the direction that past SSFM RMPs for the Pacific Region had taken. Previous SSFM RMPs were not strategically focused, therefore investments in SSFM related initiatives may not have been as efficient as possible. Part of dealing with this problem was replacing the term Issue with Strategic Goal as the RPT solicited input from various stakeholders. The change in terminology was an attempt to raise the level of thinking regarding the SSFM component to a more Strategic-level.

Please note that the linkages to the provincial government' priorities for forest and environmental management and investments are discussed in the Introduction to the Resource Management Plan.

4.1.2 SOURCES OF INFORMATION

The 5 Regional Planning Team members were the main conduits of information to the planning process. Each team member consulted with their staff specialists in their organisations to identify Strategic Goals and interim Knowledge Strategies. In addition, the planning process drew on issues identified in various Timber Supply Reviews (TSR), existing Higher Level Plans (HLP) and the need for undertaking or implementing strategic land use plans. As well, a Strategic Goals request letter **(Appendix D)** from FRBC was sent to all Forest Districts, MSRM/MWLAP Regions, and Multi-year Agreement Holders (MYA) petitioning input to the SSFM RMP. The draft Strategic Goals were then prioritized and organised by the RPT.

A set of comprehensive ranking criteria **(Appendix E)** were agreed to and adopted by the RPT to ensure that each draft SSFM Goal was adequately and equally reviewed for its priority in the Pacific Region.

4.1.3 SUMMARY STATUS OF STRATEGIC LAND USE PLANS IN PACIFIC REGION

With the exception of Vancouver Island, Strategic Land Use Planning (Land Use Plans and Land and Resource Management Plans) is incomplete within the Pacific Region. The following Table summarises the present status of Strategic Planning processes within the Pacific Region:

Table 1: Status of LRMPs in the Pacific Region

Geographic Area	LRMP/LUP Complete/Incomplete
Vancouver Island	Complete (HLP declared December 1, 2000)
Central Coast	Incomplete
Queen Charlotte Islands/Haida Gwaii	Incomplete
Sunshine Coast	Incomplete
Sea-to-Sky (Squamish/Whistler)	Incomplete
Chilliwack (Lower Mainland)	No LRMP work yet underway.

The Vancouver Island Land Use Plan was completed in February 2000. On December 1, 2000 those components of the VILUP that were relevant to the forested land base were declared as a Higher Level Plan (HLP) under the Forest Practices Code of British Columbia Act (FPC). This HLP was used as a basis to help confirm and rank the 9 Strategic Goals.

Substantial work has been completed on the Central Coast LRMP with tentative Land Use Zones (Protected Areas, Special Management Zones, etc.) announced in April 2001. The Queen Charlotte Island/Haida Gwaii LRMP was initiated in 1997, but did not proceed beyond the preliminary phase. It will likely restart within the next 12-24 months. The Sunshine Coast LRMP is in the preliminary groundwork/information gathering phase and Sea-to-Sky LRMP was initiated in January 2001. The Chilliwack geographic area does not have an LRMP process planned at the present time.

4.1.4 SUMMARY STATUS OF TIMBER SUPPLY REVIEWS IN PACIFIC REGION

Timber Supply Reviews (TSR) are in various stages of completion on Management Units (TFL, TSA) throughout the Pacific Region. In 1992, a co-ordinated approach was initiated that required each Management Unit in the province to have a TSR completed every 5 years. This requirement was made mandatory in legislation and allows the government to set harvest levels that are updated regularly and accurately reflect the changing social, economic, and environmental conditions of the Regions forests. Most of the Management Units in the Pacific Region were given a first determination in 1996 (TSR1). The second 5-year round (TSR2) of these determinations has been completed or is nearing completion (2001) on most TSAs and TFLs in the Pacific Region. The 3rd round of reviews (TSR3) has begun on those Management Units with completed TSR2.

The following Ministry of Forests web-site gives a complete and updated status for all TSA and TFL Management Units within the Pacific Region:

http://www.for.gov.bc.ca/tsb/sched.htm

Linkages of the Strategic Goals to Timber Supply Review Management Issues can be found in **Appendix F.**

4.2 SUMMARY OF KEY REGIONAL SSFM STRATEGIC GOALS

Selection of Regional Goals was determined based on input from various MOF Forest Districts, Licensees, and MSRM/MWLAP Regions. As well, Issues from the previous years RMP were reviewed and integrated into the Strategic Goals. After all input was received the Regional Planning Team (RPT) began refining and consolidating the information. Nine Strategic Goals were finally agreed to by the RPT. The RPT then began to rank the individual Strategic Goals according to the ranking criteria and formalised the results as shown in **Appendix G.** All the Strategic Goals are identified below with a brief description. More detailed Goal descriptions are included in **Appendix H**. Finally a summary of the inputs by the Ministries and Stakeholders is summarised in **Appendix I.** Funding decisions shall be made by FRBC, but it is assumed that the ranking of the Strategic Goals will provide direction for priorization of investment funds.

4.2.1 OVERVIEW OF KEY GOALS

GOAL #1. Unreliable or Incomplete Resource Inventories on the Land Base

Successful SFM requires an accurate description of the forests resources being managed, and there is a need to update or acquire good quality resource inventories in the Pacific Region. This includes determining the current state, the developmental dynamics/trends (i.e. forest types), and temporal distribution of various forest resources. Once these inventories are updated or completed, Land Managers will be in a better position to make informed decisions regarding specific Strategic Planning processes, including LRMPs and Timber Supply Reviews. This will also support Certification efforts and the establishment of a Working Forest.

It is important to understand that the basis of SSFM is resource inventories. Little in the way of effective management decision making can be made without a solid foundation of key information on various forest resources of management concern. This fundamental has been addressed in the 2002-2003 RMP through the identification of '**Unreliable or Incomplete Resource Inventories'** as the #1 priority Strategic Goal for FRBC investments. However, the RPT also recognised that in an era of declining FRBC revenues, any investments in resolving Resource Inventories must be undertaken in a strategic, area specific manner, with emphasis on those areas of higher management concern.

It is also important to undertake what can best be described as an **"Inventory of Inventories"**. This would involve a systematic review of present inventory data to identify geographic and information gaps across the Region. This will review will form the basis of the Knowledge Strategies portion of the planning process and ensure that any review will be efficient and systematic.

Goal #2: Lack of Species at Risk Management Strategies and Objectives

In general there is a lack of Species at Risk Management Strategies and Objectives within the Pacific Region. Therefore, it is unclear what information and tools must be provided to land managers to develop management strategies and objective to ensure that ensure that Species at Risk are adequately managed for. This includes Identified Wildlife Species, as well as Red and Blue listed species.

Examples of Regional Species at Risk include:

- Marbled Murrelet
- Northern Spotted Owl
- Grizzly Bear
- Northern Goshawk
- Pacific Giant Salamander
- Bull Trout, Dolly Varden, Coastal Cutthroat Trout, and Georgia Basin Steelhead
- Mountain Beaver (*rufa* sub-species).

The population and habitat status for Species at Risk have not been completely determined. Without clear and accurate information and knowledge, management strategies and objectives cannot be developed and implemented. This creates uncertainty over the future supply of these species and makes any predictive management decisions ineffective and impossible to implement. This in turn makes management decisions regarding other resource values (i.e. timber) inaccurate and potentially unsustainable.

Beyond the species listed above and in Appendix H, specific and detailed species at risk lists and strategies will be developed at the Knowledge Strategies, also known as the Goals Achievement Strategy Team (GAST), portion of the planning process. At this point a comprehensive approach to all relevant species at risk will be developed.

A complete list of Regional Species at Risk, listed by Forest District, can be accessed at the following web site:

http://www.env.gov.bc.ca/rib/wis/cdc/tracking.htm

Please note that this list is very comprehensive and includes some species that have little or no relevance to forested ecosystems, therefore should be used as a reference only.

Goal #3. Need to determine and evaluate the Impacts of Alternate Harvesting Systems

There has been a trend away from clearcutting on the Coast towards alternate methods of harvest (i.e. Variable Retention). Much of this trend is driven by market demands for Certification and the requirements for retaining attributes of biodiversity within managed forests. The social, economic and environmental impacts of Alternate Harvesting Systems have not been clearly determined. These include impacts to AAC levels, the costs to implement, and the effectiveness for maintaining stand and landscape level biodiversity. Without a clear understanding of the impacts of these Alternate Harvesting Systems, accurate decisions regarding the management of other forest resources will be impossible to make.

Goal #4. Need for Fish Habitat Strategies and Objectives and Fish Inventories

Census information is incomplete for fish and fish/riparian resource values. Without a clear determination of fish and fish habitat levels in waterbodies throughout the Region, future predictions for species and habitat is very difficult. Lack of clear knowledge also makes the development of specific management strategies and objectives very difficult, and frustrates overall management planning efforts. It is also important to determine the impacts of various management practices on fish and fish habitat and how these management activities impact other forest resource values.

Goal #5. Lack of Regional Biodiversity Management Guidelines

Biodiversity is recognised as being a critical element in the maintenance of healthy and diverse forested ecosystems. Without a good understanding of the biodiversity requirements for given ecosystems, land managers will have a difficult time determining what percentage or levels of biodiversity components and structures must be retained and managed for. This will in turn impact upon other forest resource values such as the level of harvest allowed within management units. Resolution of this information is especially important for the determination of the Landscape Unit Objectives that drive many of the key operational planning process such as harvesting and area retention.

Some examples of Biodiversity requiring Management Unit level objectives and strategies include:

- Landscape and Stand levels of Biodiversity (structures, functions, etc.).
- Fragmentation of habitats including edge effect, impacts of various opening sizes, etc.
- Seral stage distribution across the landscape.
- Reserves and linkages (connectivity) between reserves.

Goal #6. Need for Ungulate Habitat Management Strategies, Objectives, and Guidelines

Lack of appropriate Ungulate Habitat management strategies, objectives and guidelines is slowing both strategic level and operational planning processes. Land Managers need to be able to clearly define where Ungulate Habitat exists on the landscape and the best way to ensure an adequate supply exists in time and space. Once these habitats have been clearly defined the decisions regarding retention levels can be made. Strategic land use plans can then better reflect retention levels, and impacts on other resource values such as timber harvesting can be more accurately quantified.

Of highest importance is the need to focus on Ungulate Winter Range (UWR). This is the most critical habitat element required for ungulate life cycles. UWR is also causing major conflicts with timber harvesting at the operational planning level since Strategic Level Plans (i.e. Landscape Unit Objectives) are incomplete and offer no clear and quantifiable management direction. Addressing Ungulate Winter Range may require a higher priority for investment due to the legislated requirement for UWR to be declared by October 15, 2003.

Specific areas of concern include:

- Location of Ungulate Winter Range (deer, elk, mountain goat.)
- Location of other critical habitats (spring habitat, adequate summer range habitat, travel corridors, etc).
- Population trends in various landscape/management units.
- Quality and quantity of existing habitats in areas of concern and/or potential conflict.
- Research into the creation of habitat in 2nd and 3rd – growth stands (links to Sustainable Harvest Strategic Objective).

Goal #7. Need to Strengthen Forest Modelling

Forest Modelling allows future forest conditions to be predicted and in turn allows land managers to make decisions regarding specific forest resource values. Models must have a high level of predictability and accuracy or their utility is limited. By improving existing and future forest models, land managers have a much higher probability of accurately predicting the future forest conditions, and making decisions that optimally balance the social, economic, and environmental resource values found on the regional land base. Examples of models include:

- Timber Supply Models.
- Wildlife Species-Habitat Models.
- Growth and Yield stand and forest-level Models.
- Impacts of Alternate Silviculture System Models.
- Site Index models (i.e. Growth-intercept, etc.).

Goal #8. Need for Regional Water Quality and Quantity Management Strategies and Objectives

Water Quality and Quantity is a concern in parts of the Region where conflicts between key water resources and other resource values are likely to occur. There is a need to develop specific Water Quality and Quantity Management Strategies and Objectives that reflect these concerns. Examples include:

- Inventory of water bodies to obtain baseline data. Focus will be on areas of management concern.
- Water monitoring over the regional landscape to learn about specific impacts on water quality and quantity.
- Studies to determine the impacts of forest management activities on quantity and quality of water flow in community watersheds, fish streams and on domestic water intakes.

Land Managers can then better determine what areas should receive priority in Strategic Planning processes and what activities can be appropriately zoned in these defined areas. Without a resolution of these concerns Strategic Planning processes will have difficulty successfully managing water resource values. This Strategic Goal links to the provincial governments Living Rivers Strategy and the Enhanced Environmental Values (EEV) component of the RMP. Several Regions of the Ministry of Water, Land and Air Protection (MWLAP) identified this Strategic Goal as a regional priority.

Goal #9. Unreliable or Incomplete Cultural Heritage Resource Inventories

There is a need to locate, map and inventory areas considered to be of cultural heritage significance. Much of the information regarding the locations of heritage sites is unknown at the present time. Therefore, strategic planning processes often lack the ability to make optimal decisions regarding cultural heritage values due to the uncertainty and lack of confidence surrounding incomplete or unreliable inventories for those resource values of management concern. In addition, the present lack of said inventories leads to potential conflicts and delays in accessing timber and non-timber resources due to the inability of various government and industry agencies to address First Nations concerns in a timely, efficient and reliable manner.

4.2.2 DESCRIPTION OF PRIORITY SETTING

Strategic Goals were given priority (ranked) according to the criteria presented in **Appendices G and H**.

4.3 SUMMARY OF KNOWLEDGE STRATEGIES

4.3.1 OVERVIEW OF KNOWLEDGE STRATEGIES

The second step in the creation of the Resource Management Plan involves the development of a Knowledge Strategy for each identified Strategic Goal. A Knowledge Strategy can be defined as a collection of activities that when implemented together will build the knowledge required to address the SSFM Goal at the strategic planning and decision making level.

The process involves establishing "Knowledge Strategy Teams," also known as Goals Achievement Strategy Teams (GAST), that consist of experts from government, stakeholders, and other qualified persons in the fields relating to the given Strategic Goal. These Teams identify the existing knowledge, information gaps, and the strategies required to successfully implement the specific Strategic Goal. This includes the collection of base data using field inventories, mapping exercises, and research projects. The base data is then subjected to a variety of analysis and synthesis, applications and tools are created, and finally extension and monitoring activities are developed and implemented. The end result is support of specific land use and forestry planning and decision-making efforts. In addition, the information base, analysis, and monitoring provide the information base and indicators to support certification of sustainable forest management practices.

4.3.2 DESCRIPTION OF PRIORITY SETTING

Due to time and organisational constraints, the 2002-2003 SSFM RMP process was unable to establish Goals Achievement Strategy Teams (Knowledge Strategy Teams) for the individual Strategic Goals. The RPT will undertake to establish these Teams in October 2001, after this RMP is approved. The intent is to be fully organised and have a draft Knowledge Strategy in place by January 1, 2002 in preparation of the 2003-2004 RMP. In the interim, it was determined that the appropriate Issues from the 2001-2002 RMP would be used as a surrogate Knowledge Strategy for the 2002-2003 RMP. This strategy allows the continuity of investment areas from last years RMP while allowing investments to be made within a strategic planning framework. Priority is given based on the ranking of the nine 2002-2003 Strategic Goals and is detailed in the Interim Knowledge Strategies **(See Appendix J)**.

4.3.3 Performance Indicators

The RMP process did not proceed far enough this year to develop performance indicators. This part of the planning process will start in October 2001 after the Goals Achievement Strategy Teams are formed. Tentatively the RPT will consider using that the performance indicators for the RMP be linked to accepted performance indicators for SFM.

4.4 SUMMARY OF REGIONAL INVESTMENT RECOMMENDATIONS

The planning team recommends that FRBC consider a portfolio of projects that address the needs described in the nine Strategic Goals and Interim Knowledge Strategy.

4.4.1 Guidelines for Workplan Submission

Proponent Workplans are expected to address and be consistent with the Strategic Goals outlined in this RMP. In developing the Workplan each partner should consider the fit between existing and new projects with priority given to:

A. Funding existing projects that are consistent with the RMP knowledge strategy (on-strategy)
B. Winding down or phasing out off-strategy projects at logical break-off points.
C. Adding new on-strategy projects consistent with and supporting the RMP strategy

The planning team recommends that existing projects deemed to no longer be consistent with the SSFM Strategic Goals outlined here should either be phased out or wound down at a logical break point. If a project is deemed to no longer serve the objective of Strengthening Sustainable Forest Management, there is no benefit in continuing expenditures other than what is required to bring the project to a logical conclusion. In choosing a logical break point, off-strategy projects should be concluded to balance between minimising further spending while concluding the project so that the collected information is useable. In submitting the Workplans, partners should describe how each project is consistent with the Strategic Goals of this RMP.

4.4.2 Projected Budget

Since Multi-year Agreement Holder Workplans are not available for 2002-2003, the information that is required to complete Table 2 is not fully available at this time. The 2001-2002 MYA Workplans were reviewed for investment projections for the 2002-2003 fiscal year, but suitable information was for the most part lacking. As information becomes available it will be summarised and Table 2 of RMP amended to reflect the updates.

Table 2 specifies the 2002-2003 Strategic Goals, followed with investment information on the Issues taken from the 2001-2002 RMP.

Table 2. Projected (Draft) SSFM RMP Budget 2002-2003

#1. Unreliable or Lack of Resource Inventories		
Issue	**$ Invested**	**Percentage**
Need to establish and improve access to baseline inventories for various planning initiatives.		
Need to refine, update and standardise ecological classification for various planning initiatives.		
Need to refine, update and standardise terrain classification for various planning initiatives.		
Need to refine, update and standardise vegetation classification for various planning initiatives.		
#2. Lack of Species at Risk Management Strategies and Objectives		
Issue	**$ Invested**	**Percentage**
Need to refine appropriate management strategies for Marbled Murrelets.		
Uncertainty around timber supply impacts associated with Identified Wildlife Management Strategies.		
Need to refine appropriate management strategies for Grizzly Bear and Black Bear.		

Uncertainty around management strategies and timber supply impacts associated with maintaining rare and endangered plants and ecosystems.		
Need to refine appropriate management strategies for predatory birds (i.e. Northern Goshawks).		
Need to refine appropriate management strategies for the Spotted Owl.		
#3. Impacts related to Alternate Harvesting Systems		
Issue	**$ Invested**	**Percentage**
Uncertainty around Growth and Yield of future stands affected by various silviculture systems.		
Uncertainty around management strategies and timber supply impacts associated with ecosystem based management.		
Uncertainty around management strategies and timber supply impacts associated with silviculture systems.		
Opportunities to mitigate timber supply impacts associated with visual inventories		
#4. Need for Fish and Fish Habitat Management Strategies and Objectives		
Issue	**$ Invested**	**Percentage**
Need to refine appropriate management strategies for Fish and Fish Habitat.		
5. Lack of Regional Biodiversity Management Guidelines		
Issue	**$ Invested**	**Percentage**
Uncertainty around management strategies and timber supply impacts associated with managing for landscape level biodiversity		
Uncertainty around management strategies and timber supply impacts associated with stand-level biodiversity.		
Need to refine landscape-level biodiversity monitoring programs.		
#6. Lack of Ungulate Habitat Management Strategies, Objectives and Guidelines		
Issue	**$ Invested**	**Percentage**
Need to refine appropriate management strategies for ungulates.		
#7. Need to Strengthen Forest Modelling		
Issue	**$ Invested**	**Percentage**
Need to refine, develop and improve access to planning models		
Need to establish and improve access to sample data.		
Uncertainty around management strategies and timber supply impacts associated with simulating natural forest conditions.		
Need to refine site productivity estimates applied to growth and yield for future stands.		
Need to refine operational adjustment factors applied to growth and yield of future stands.		
Need to establish and maintain installations in support of growth and yield of future stands.		
#8. Need for Water Quality and Quantity Management Strategies and Objectives		
Issue	**$ Invested**	**Percentage**
Uncertainty around strategies and timber supply impacts associated with managing for water quality and quantity.		
#9. Unreliable or Incomplete Cultural Heritage Inventories		
Issue	**$ Invested**	**Percentage**
Need to refine methods for addressing cultural heritage resources.		
Uncertainty around strategies and timber supply impacts associated with maintaining archaeological sites.		

4.5 PROVINCIAL PRIORITIES

Issues of a provincial significance or scale could be referred to Headquarters for consideration for inclusion in the Headquarters Resource Management Plan (HRMP).

4.6 CONCLUSION

The recommended 2002-2003 SSFM Resource Management Plan is a concerted strategic level approach attempting to address the priority issues facing the Pacific Region. When the Knowledge Strategies and Regional Investment Recommendations are fully completed the RMP should be at a level that will most effectively focus SSFM investments in the Pacific Region.

Appendix A. Pacific SSFM RMP Planning Team Contact Information

Organisation	Planning Team Member	Address
Ministries of Sustainable Resource Management and Water, Land and Air Protection	**Michael Leeson, RPF** Forest Resource Management Planning Co-ordinator	2975 Jutland Road Victoria, BC V8W 9M1 Tel: 250-356-2258 Email: Michael.Leeson@gems5.gov.bc.ca
Ministry of Sustainable Resource Management	**Mike Connor, RPF** A/Manager Resource Information and Inventory VI/LM	2100 Labieux Road Nanaimo, BC V9T 6E9 Tel: 250-751-7128 Email: Mike.Connor@gems6.gov.bc.ca
Ministry of Forests	**Bill Luscombe, RPF** Forest Renewal Planning Forester	2100 Labieux Road Nanaimo, BC V9T 6E9 Tel: 250-751-7113 Email: Bill.Luscombe@gems4.gov.bc.ca
International Forest Products	**Dennis Lozinsky, RPF** Inventory Forester	P.O. Box 381, 208 - 5760 Teredo St. Sechelt, BC V0N 3A0 Tel: 604-740-8220 Email: Dennis_Lozinsky@Interfor.com
Forest Renewal British Columbia (FRBC)	**Don Closson** Investment Officer	1180 Ironwood St., Ste. 110 Campbell River, BC V9W 5P7 Tel: 250- 286-7772 Email: Don.Closson@gems5.gov.bc.ca

Appendix B. Ground Rules

STRENGTHENING SUSTAINABLE FOREST MANAGEMENT (SSFM) - GROUND RULES FOR THE PACIFIC REGION RMP

In order to assure adequate understanding between the Ministries and Forest Renewal BC, a set of **ground rules** have been established. The ground rules are set by Forest Renewal BC in consultation with the Ministries and are used as a **benchmark** against which the RMP will be evaluated.

Planning and Reporting Timeframe:

July 3	FRBC Letter requesting Strategic Goal input to be sent out to recipients. (FRBC)
July 17	Signed Ground Rules due. (MSRM and MWLAP, MOF, and FRBC)
July 20	Management Unit staff and others must have their Regional, Sub-regional, and Local level comments into the Forest District Managers for consolidation. (As described)
August 3	District Managers must have the comments and recommendations summarized and delivered to the Regional Planning Team. (MOF)
August 31	Draft RMP to be distributed to participants and invited stakeholders for review. (MSRM and MWLAP and MOF)
September 14	Final deadline for review comments to be submitted to Regional Planning Team. (As described)
September 28	Final RMP delivered to FRBC. (MSRM/MWLAP and MOF)

Note: Party responsible for meeting Timeframes listed in brackets (i.e. MOF).

1. Geographic Units

- Regional plan with input from the MOF Forest Districts, MSRM and MWLAP Regions, Agreement Recipients, and Stakeholders on Strategic Goals and strategies to achieve these goals. FRBC investment level targets will be at the Management Unit Level (i.e. TFL, TSA, etc.)

2. Roles and Responsibilities

a. **Lead**:

- MOF and MSRM/MWLAP will assume a joint lead role in development of RMP. FRBC will be involved in an Advisory role during the RMP development process.

b. Roles and Responsibilities:

- All meetings will have key action items summarised and agreed to by all parties before the end of the meeting. This will ensure the planning processes stay on track and that all parties are formally agreeing to the content and outputs of the meetings.
- **Regional Steering Committee** is composed of Ken Matthews (MOF), Don Gosnell (MSRM and MWLAP) and Ron Bronstein (FRBC). Ron Bronstein's role will be advisory in nature.
- **The Regional Steering Committee** will:
- Provide managerial direction to the Regional Planning Team (RPT).
- Review and give managerial approval to the Strategic Goals and Knowledge Strategies coming from the RPT.

- **Regional Planning Team (RPT)** will:
- Provide regional vision and strategic direction to the Goals Achievement Strategy Teams.
- Identify and refine key Regional Strategic Goals.
- Provide direction as necessary to the Goals Achievement Strategy Teams and review the final RMP documents.
- Refer the Draft RMP documents to the appropriate Agreement Recipients and stakeholders when complete.
- Refer the Final RMP documents to the Regional Steering Committee for final approval.
- Consist of Michael Leeson (MSRM and MWLAP), Bill Luscombe (MOF), Mike Conner (MOF), and Don Closson (FRBC) and Agreement Holder representatives (to be determined later).
- Produce any Summary or Update Reports for the Regional Steering Committee (if required).

- **Strategic Goal Development** will:
- If sufficient time exists after the Strategic Goals have been identified then each Goal identified by the RPT will have **a Goals Achievement Strategy Team** assigned to it. If insufficient time exists, and agreed upon time frames cannot be met, then the Goals Achievement Strategy Teams will be identified and formed in preparation for the 2003/2004 RMP planning cycle.

- **Goals Achievement Strategy Teams** will:
- Become involved at the start of the 2nd Phase (Development of Knowledge Strategies) of the RMP process.
- Consist of persons from Agencies, Agreement Recipients, and Stakeholders with the Technical background necessary to develop the specific knowledge strategy.
- Develop a Strategy as per the 2002/2003 SSFM RMP Guideline for each Goal identified by the RPT.
- Give twice monthly updates to the RPT indicating progress on the knowledge strategies for the specific goals.
- Terms of Reference for the Goals Achievement Strategy Teams will be developed jointly by the Regional Planning Team and the individual Goals Achievement Strategy Teams. This will occur as soon as each Goals Achievement Strategy Teams have been formed.

- Participants will be summarised in an Appendix to be attached to the final RMP.

c. **Participation and Attendance:**

- All participants must attend scheduled meetings or send a qualified alternate in their place.
- Specific participants for the Goals Achievement Strategy Teams will be named after the Strategic Goals have been determined.

d. **Consultation:**

- See Roles and Responsibilities.
- **The RMP process is technical in nature and not a forum for input of values of a social or investment-planning nature.**
- All partner, stakeholder, and agreement holder involvement (or lack of involvement) will be documented by the RPT.

3. Forest Renewal BC Input

- **Performance Targets:** Will be at a Regional level.
- **Investment Level Estimates:** Will be at a Planning Unit level.
- **Participation in process:** Will commit to having a person available in an advisory role on the Regional Planning Team and the Regional Steering Committee.

4. Process for RMP Development

4.1 RMP Content

a. **Per Guidelines**

- The 2002/2003 RMP Guidelines for SSFM (March 2001) outlines the **required** content. **Please note that the term "Issue" has been replaced by "Goal".** All 3 signatory agencies acknowledge this change as an attempt to refocus the RMP onto the strategic level, and that the remainder of the RMP planning process will remain unchanged.
- Opportunities within the knowledge strategies to be identified jointly by participants.
- Regional Strategic Goals will be identified, and knowledge strategies to address the priority Goals will be developed as time and resources allow.

b. **Research**

- Significant Strategic Goals requiring further study are to be identified for and referred to the research process.
- Strategic Goals will be identified as operational (operational trials) or strategic in nature.
- Strategic Goals should be defined in context and forwarded to the research process as soon as possible.
- The research process will deal with knowledge gaps for a specific Strategic Goal, how filling these gaps will contribute to the resolution of the Strategic Goal, and how important the Strategic Goal is to SFM and HLP processes (i.e. TSR, LRMP, etc).

c. Outcomes and Performance Measures

- If required, will be agreed upon by the Regional Planning Team.
- At minimum, the 2002-2003 RMP will produce a series of clearly defined Regional Strategic Goals or Goal Statements that will be approved by the Regional Steering Committee.
- Management Unit and Local-level Goals will be dealt with as sub-sets (or Sub-Goals) of the Regional Strategic Goals, and addressed at the 2nd phase (Knowledge Strategies) of the RMP planning process through the Goal Achievement Strategy Teams.
- Performance Measures will be developed as part of the Knowledge Strategies.

4.2 RMP Format

- To be determined by RPT as per the **2002-2003 SSFM RMP Guidelines**.
- Table of Contents to be developed for use as a guide.

5. Conflict Resolution (around determination of priorities)

a. Principles:

- Ground rules established by participants prior to plan establishment will be followed unless variance is approved by the RPT.
- If any unresolved conflicts arise the **2002/2003 RMP SSFM Guidelines** (March 2001) will provide direction.
- If reference to the RMP SSFM Guidelines cannot solve the conflict, then the following will apply:
  - Goal Strategy Achievement Teams conflict – conflict will be referred to the Regional Planning Team.
  - Regional Planning Team Conflict – conflict will be referred to the Regional Steering Committee.

b. Conflicts must be resolved utilising the conflict resolution process.

6. General

a. General rule is to proceed to objectives with best efforts and using best information available. Where complete information is not available, or optimal solution is not available, make best decisions possible. If necessary, adjustments may be made later when better information or resources are available.

7. Role of RMP in Forest Renewal BC's Investment Plan

The final RMP will be THE Source Document for FRBC investments. The highest priorities and value opportunities identified will be matched with FRBC's other objectives in the investment planning process.

The Pacific Region SSFM Ground Rules are approved by the Undersigned:

Ron Bronstein Date
Forest Renewal BC

Don Gosnell Date
Serving the Ministry of Water, Land, and Air Resources
and the Ministry of Sustainable Resource Management

Ken Matthews Date
Ministry of Forests

Appendix C. Pacific SSFM RMP Planning Process and Schedule

Date	Activity
June 5 2001	Initial meeting of Regional Planning Team for SSFM RMP.
July 4, 2001	Letter sent by FRBC – Pacific Region requesting input from Ministries and Stakeholders for SSFM RMP Strategic Goals.
July 4-Aug 3	Strategic Goal input from Ministries and Stakeholders sent to MWLAP/MSRM, MOF and FRBC.
July 17	Invitation to participate on RPT extended to stakeholders. This included Weyerhaeuser, TimberWest, Canadian Forest Products, Western Forest Products, and International Forest Products.
August 3-August 13	Information summarised and preliminary ranking of some Strategic Goals.
August 14	Regional Planning Team (RPT) meeting to rank, prioritize, and finalise the Strategic Goals for the Pacific Region.
August 31	Draft SSFM RMP referred to FRBC, Ministries, and Stakeholders.
September 14	Final date for comments on Draft SSFM RMP to be sent to RPT.
September 28	Final RMP delivery to FRBC.
October 2001	Goals Achievement Strategy Teams (GAST) to be formed.

Appendix D. FRBC Letter and attachments requesting input into SSFM RMP

To: MYA Holders (Chief Foresters)
Regional & District Managers, Ministry of Forests
Regional Directors, Ministry of Environment

From: Ron Bronstein, Regional Director, FRBC, Pacific Region

Re: 2002/03 Resource Management Plan for Strengthening Sustainable Forest Management

The time has come to once again renew and update the Resource Management Plan (RMP) for Strengthening Sustainable Forest Management (SSFM).

First, I wish to thank all members of the industry / inter-agency planning team that prepared the 2001/02 RMP for SSFM. It is clear that a lot of thought and effort went into the preparation of this planning document. It provides a solid foundation for future work.

In the context of continuous improvement I have a few outstanding concerns which I would like to see addressed in the 2002/03 SSFM RMP:

1. We need to establish a much clearer connection between the strategic direction as documented in the SSFM RMP and the Regional Investment Plan (RIP). While I don't believe currently approved work-plans are inconsistent with the SSFM RMP, at the same time I'm not convinced that there is a clearly understood and documented connection between the two instruments. We need to also carry this connectivity through to how the SSFM RMP and RIP work together to meet FRBC's objective of strengthening sustainable forest management.

2. While the existing SSFM RMP identifies numerous outstanding resource management issues that need to be addressed, it **lacks a clear statement of goals** towards which investments in SSFM are taking us in the medium to long term. Figure 1 (copy attached) of the existing SSFM RMP serves to illustrate this point. It clearly shows that addressing strategic planning issues requires a solid foundation of baseline inventories, followed by analysis, applications and monitoring, and use of the foregoing to conduct and support planning efforts targeted at achieving the goals. But the document fails to identify **what** these goals are, other than in a very general sense (i.e., certification, TSR, LRMP, VILUP, LUP).

3. The SSFM RMP lacks specific connection to **where** on the land should SSFM investments be strategically directed (e.g., no maps at all in the document). This issue is complicated by the commitments made in existing Multi-Year Agreements that have tenure ownership implications. But regardless of MYA Agreements, the SSFM RMP needs to have some element of **geographic direction** for its goals and strategies. There are few, if any, resource management issues and goals that stop or start at some administrative line on a map that defines a tenure boundary.

4. The SSFM RMP needs to demonstrate **more local involvement** to help build a sense of "ownership" and commitment. This is especially true for goals established at the Management Unit (e.g., TSA, TFL) and local (e.g., landscape unit or drainage) levels. I believe that this issue could potentially be at least partly addressed by greater direct District involvement in the SSFM RMP planning process.

As part of a methodology to address the above points, I have attached instructions and templates for the first phase of a five-part process that I propose that we collectively employ to prepare the 2002/03 SSFM RMP. Succinctly, the five parts, or phases, would be:

1. Identification of SSFM Goals at three levels of geographic resolution: Region, District, and local. Goals at the District and local levels are to be consolidated and co-ordinated by each Forests District Manager.

2. Bring together all goals submitted, prior issue statements, and an inventory of current and past SSFM investment outputs in a database ("inventory of inventories" compendium) open and accessible to all participants. This is an essential step as one of the first steps in any strategic planning is to determine what resources and assets you are starting

out with. It helps in determining areas of strengths and weaknesses and provides a foundation for future efforts.

3. Goal Achievement Strategy Teams (GAST) develop co-ordinated action plans that best address the achievement of the goals through targeted SSFM investments. We can later assemble these teams from the right mix of business area experts according to the goals being targeted. For example, a GAST targeting a goal of preservation of rare and endangered species habitat would likely have a different membership from a GAST targeting a goal of minimising sediment damage to riparian ecosystems.

4. Prioritisation of competing goals and co-ordination of strategies that may serve to meet the needs of one or more goals simultaneously (e.g., baseline inventories such as VRI and TEM would often be a common part of a number of goal achievement strategies).

5. Documentation of a five-year action plan (with appropriate budget) of strategic SSFM investments within the Pacific Region to achieve clearly stated goals in clearly articulated geographic contexts.

Given that we have not yet formally reconstituted the Regional Planning Team for building the 2002/03 SSFM RMP I have asked Don Closson, (Investment Officer, FRBC (250)-286-7772), Mike Connor, Regional Land Information Manager, Forests (250) 751-7128, and Mike Leeson (Forest Resource Management Planning Co-ordinator, Ministry of Sustainable Resource Management (250)-356-2258) to lead the co-ordination of this first phase. Any questions or issues can be raised or discussed with one of them.

I anticipate that as we move into the second and third phase of this process we will need to reconstitute the SSFM RMP Regional Planning Team.

Finally, I welcome any comments or suggestions as to the objectives of this undertaking and the process as a whole. I look forward to and thank you for your participation.

Yours truly,

Ron Bronstein, Regional Director, FRBC

Attachment #1:

Building the 2002/03 Resource Management Plan for Strengthening Sustainable Forest Management

Process Guidelines and Instructions for Phase 1:

Identification of Goals at the Regional, District (Management Unit) and Local Levels

1. **These instructions apply to each FRBC Multi-Year Agreement recipient that is participating in the SSFM RMP building process. They also apply to each of the four Regions of the former Ministry of Environment, Lands & Parks (MELP) that overlap the FRBC Pacific Region. Finally, they apply to the eight Ministry of Forests District offices and the Regional Office of the Vancouver Forest Region.**

2. **Complete** one **form for your top priority goal at the Regional level. There will be numerous potential goals or desired outcomes that will support SSFM at the Regional (or broader) level, but this goal or desired outcome tops your list.**

3. **Submit your Regional priority goal form directly to Don Closson at Don.Closson@gems5.gov.bc.ca (250) 286-7772. Deadline for submission is July 20, 2001.**

4. **Submit** one **District (Management Unit) and** one **Local priority goal form to each MOF District Manager for which you have an interest in making a submission. This will mean that each MYA holder and each MELP**

Region can submit up to 8 District and 8 local priority goal forms, but need not necessarily achieve this maximum. The same deadline as per # 3 above.

5. **District Managers will consolidate and potentially rationalise (e.g., co-ordination of similar vision submissions) priority goal submissions in consultation, as necessary, with those making the submissions. The District Managers can also prepare one priority goal form for both the District and a specific locality, either before or after the other submissions come in. The District Managers will then submit their consolidated packages of goal forms, together with any perspectives, comments and recommendations, to Don Closson by August 3, 2001.**

6. **At this point, the Regional Planning Team will need to be reconstituted to review and co-ordinate the total package of goal forms and make plans for implementation of Phases 2 and 3.**

Appendix E. Pacific Region SSFM Criteria for ranking Strategic Goals.

Criteria: Question	Explanation	Score and *Weight
LRMP: How well does the Strategic Goal relate to high priority issues identified in an approved LRMP?	The LRMP provides comprehensive stakeholder participated, government approved direction, and is an excellent reference source for identified resource issues/goals.	0-5 *2
CCFM: How well does the Strategic Goal relate to the 6 criteria [2], 20 elements[3] and indicators represented in the Canadian Council of Forest Ministers' report "Sustainable Forests: A Canadian Commitment?	The Canadian Council of Forest Ministers' criteria are an important initiative that is linked to national goals for sustainable forestry certification.	0-5 *2
TSR: How well does the Strategic Goal relate to timber supply review issues?[4]	Forest level Goals identified in the timber supply planning process are strategic in nature, and are considered high in priority to SSFM planning	0-5 *2
Success: Will the scope of the Strategic Goal ensure a high probability of achieving a solution through knowledge investment?	The SSFM Strategic Goal must be reasonable in scope, permitting any knowledge investments to yield satisfactory and measurable resolution.	0-5 *1
Stakeholders: Will knowledge solutions to this Strategic Goal benefit a variety of stakeholders?	If the Strategic Goal is too narrowly focused and specific to a single interest it may have limited community benefits. Goal resolving investments should benefit a number of interest or stakeholders.'	0-5 *1
Linkage: Is the Strategic Goal linked to a variety of management disciplines?	Knowledge investment return will be maximised for Strategic Goals that affect a number of decision-makers, planners, agencies, and stakeholders.	0-5 *1
Policy: Does the Strategic Goal link to (or influence) factors which are driving policy change?	Strategic Goals that result in pressure to review or change government policies may be indicative of real, pertinent, current issues. Goals relating to pressures for change may be of importance at various levels of government. Solutions to these Goals can provide valuable input for policy change reviewers and decision-makers.	0-5 *1
Commonality: Has the Strategic Goal been identified in other management units?	Strategic Goals common to a number of administrative jurisdictions may reflect greater importance. Solutions derived in one jurisdiction that may be extrapolated to other forests increase knowledge investment return.	0-5 *1
Urgency: Does the Strategic Goal reflect an urgent need for resolution and improved decision-making?	A higher priority may be appropriate for those Strategic Goals that are delaying or preventing important decisions, particularly if it is a recurring issue.	0-5 *1
	Maximum Strategic Goal Score	**60**

[1] SSFM refers to the FRBC strategic objective while SFM refers to the concept of sustainable forest management.

[1] 1. Conservation of biological diversity; 2. Maintenance and enhancement of forest ecosystem condition and productivity; 3. Conservation of soil and water resources; 4. Forest ecosystem contributions to global ecological cycles; 5. Multiple benefits to society; 6. Accepting society's responsibility for sustainable development.

[1] Ecosystem diversity; Species diversity; Disturbance and stress; Ecosystem resilience; Extant biomass; Policy and protection forest factors; Global carbon budget; Forest land conversion; Carbon dioxide conservation; Policy factors; Hydrological cycles; Productive capacity; Competitiveness; Contribution to economy; Non-timber values; Aboriginal and treaty rights; Participation by Aboriginal communities; Sustainability of forest communities; Fair and effective decision making; informed decision making.

[1] Documented in: Forest Management Issues Identified Through the AAC Determination Process – TSA/TFL Timber Supply Reviews: 1992:1996. Timber Supply Branch, BC Ministry of Forests, December 1996.[1]

Appendix F. Linkages between SSFM RMP and TSR (TSA & TFL) in the Pacific Region

TSR ISSUES	IMPORTANCE	ADDRESSED IN RMP
Determine effects of implementing the VILUP. If AAC is no longer consistent with the plan, re-determine the AAC early if required.	Urgent	**Yes** - through focus on VILUP knowledge gaps, Resource Inventories, etc.
Growth and Yield – A number of high priority G&Y Issues in various TSAs/TFLs require resolution. Includes OAF, DWB, Site Productivity, etc.	High	**Yes** – through the inclusion of G&Y as a priority Resource Inventory and Forest Modelling.
Inventory – various Issues including completing VRI, volume discrepancies, cultural heritage resources, wildlife, biodiversity, riparian, etc.	High	**Yes** – through Resource Inventories, Biodiversity, Species at Risk, and Cultural Heritage Inventories.
Planning – Various Issues including UWR, alternative silviculture, VQOs, etc.	High	**Yes** – through Ungulate Habitat, Impacts of Alternate Harvesting, Resource Inventories, etc.
Numerous other lower priority TSR Issues relating to Growth and Yield, Inventory, Planning, etc. that are addressed in the nine Strategic Goals for SSFM.	Information needed - would be beneficial.	**Yes –** through various Strategic Goals.

Appendix G. Ranking of Regional Strategic Goals

	LRMP	CCFM	TSR	Success	Stakeholders	Linkage	Policy	Common	Urgency	**TOTAL**
Resource Inventories	10	5	10	4	5	5	4	5	5	**53.0**
Species at Risk	9	5	8	5	5	5	3	5	4	**49.0**
Alternate Harvesting	4	7	10	3	5	4	4	5	5	**47.0**
Fish Habitat	10	6	4	5	5	5	2	4	3.5	**44.5**
Biodiversity Guidelines	8	5	5	3	5	3.5	4	4	4	**41.5**
Ungulate Habitat	4	6	6	4	3.5	4	1	4	3.5	**36.0**
Strengthen Forest Models	5	4.5	5	3	4	4	4	3	2	**34.5**
Water Quality and Quantity	4	5.5	1	4	3	3	2	2	3	**27.5**
Cultural Heritage	3	3	2	4	4	4	0	1	4	**25.0**

Appendix H. Strategic Goal Template #1 (s)

TEMPLATE 1: Key Regional SSFM Goals

SSFM Goal # 1:	**Title: Unreliable or Lack of Resource Inventories on the Regional Land Base**

Overview Description of the Regional Strategic Goal:

Describe the goal in terms of a specific knowledge gap.

Successful SFM requires an accurate description of the forests being managed. There is a need to update, re-inventory, consolidate, and standardise Resource Inventories across the Region, and to determine the current state, the developmental dynamics/trends (i.e. forest types), and temporal distribution of various forest resources. Some forest inventories are very old and outdated. Overestimation and underestimation of timber volumes is a common problem throughout the region. Therefore, strategic land managers and decision makers often lack the ability to make optimal present and future decisions regarding environmental, timber and non-timber resource values, due to the uncertainty and lack of confidence surrounding inaccurate or unreliable inventories for those resource values of management concern. Specific LRMP processes need good inventory data (TEM and PEM) to ensure high quality plans are produced. Lack of Resource Inventories is especially problematic within Timber Supply Areas (TSA); therefore, priority should be given for completing Resource Inventories in these Management Units. The concepts of a Working Forest and Certification are supported through clear identification of, and the ability to delineate specific forest resource values over the regional landscape. An "Inventory of Inventories" will also be undertaken to determine the status of present inventories and where geographic and information gaps, etc. exist. This will be formally undertaken at the Knowledge Strategies stage of the planning process.

Examples of Resource Inventories and Tools include:

- Terrestrial Ecosystem Mapping (TEM)
- Predictive Ecosystem Mapping (PEM)
- Vegetation Resource Inventories (VRI)
- Habitat Capability/Suitability Mapping
- Wildlife and Fisheries Inventories
- Terrain Stability Mapping (TSM)
- Riparian Classification
- Visual Quality Objective Mapping
- Growth and Yield
- Karst/Cave Inventories
- Water Quality and Quantity Inventories

Relationship to Sustainable Forest Management:

The maintenance of environmental values:

A number of environmental resource values are at risk since lack of specific resource inventories creates large uncertainties in any management decisions that may affect these environmental resource values. Biodiversity, species at risk, fisheries, general wildlife, etc. all have the potential to be negatively impacted due to the increased uncertainty, which is contrary to the principles of SFM.

The sustainable use of timber resources:

Unreliable resource inventories creates uncertainty for any timber resource use planning efforts. Regional Land Use Planning (LRMP) decisions that are a high priority may not be effectively implemented, Landscape Unit Objectives may be difficult to determine or implement, and Timber Supply Reviews will have much higher levels of uncertainty and risk. Operational Planning decisions like Forest Development Plans will also continue to be controversial and difficult in the absence of a Strategic Planning direction.

The sustainable use of non-timber resources:

A number of non-timber resource values are at risk since lack of specific resource inventories creates large uncertainties in any management decisions that may directly or indirectly affect these resource values.

Relationship to Strategic Resource Plans and Decisions:

Strategic Decisions:

Reliable Resource Inventories will allow Timber Supply Reviews that can more accurately quantify the timber and non-timber resources on the Regional land base decreasing the uncertainty surrounding harvest levels. There is room for possible changes in the AAC of a given Management Unit, resulting from more reliable resource inventories. This information will not be available for this round of TSR determinations (TSR2) for Timber Supply Areas, but will likely be available for the next round of determinations (TSR3). This information may be available for TSR3 determinations on a number of Tree Farm Licenses (TFL) in the Pacific Region which include TFL 37, TFL 38, TFL 43, and TFL 54.

Strategic Resource Plans:

Given the governments' priority to complete the LRMP and Landscape Unit processes as soon as possible, obtaining accurate and relatively complete resource inventories is very important. A number of LRMPs either proposed or in the early stages of development will benefit from this information through greater certainty surrounding decision making. These include the Sea-to-Sky LRMP, Sunshine Coast LRMP, and the Queen Charlotte LRMP. Better information will also help with the implementation of the approved Vancouver Island Land Use Plan (VILUP) and the priority 2nd phase of the Central Coast Land and Coastal Resource Management Plan (CCLCRMP).

Cross Reference to Management Unit Issues (if applicable):

This will be addressed at the Knowledge Strategies portion of the planning process.

TEMPLATE 1: Key Regional SSFM Goals

SSFM Goal # 2:	**Title: Lack of Species at Risk Management Strategies and Objectives**

Overview Description of the Regional Strategic Goal:

Describe the goal in terms of a specific knowledge gap.

Beyond several high profile species there is a lack of Species at Risk Management Strategies and Objectives within the Pacific Region. Specifically, management objectives are defined as qualitative and quantitative goals to be aimed for when managing forest resource values, while management strategies are the processes required obtaining those objectives. Therefore, what information and tools must be provided to land managers to develop management strategies and objective so they can ensure that Species at Risk are adequately managed over the Regional landscape? This includes Identified Wildlife Species, as well as Red and Blue listed species.

Regional Species at Risk include:

- Marbled Murrelet
- Grizzly Bear
- Northern Goshawk
- Pacific Giant Salamander
- Northern Spotted Owl
- Bull Trout, Dolly Varden, Coastal Cutthroat Trout, and Georgia Basin Steelhead
- Pacific Water Shrew
- Purple Martin
- Keen's Long-eared Myotis
- Mountain Beaver (*rufa* sub-species)
- Townsend's Vole
- Numerous other plant, bird and animal species.

The development of appropriate management strategies and objectives involves complete and specific information regarding these species such as:

- Priority emphasis on old-growth dependent species required.
- Accurate determination of population levels.
- Specific critical habitat requirements.
- Status of habitat quality and availability – Includes TEM, PEM and habitat suitability/capability projects. Must link to areas with high values or major potential conflicts.
- Population trends.
- Impacts of forest management strategies and techniques (i.e. harvesting, silviculture, etc.)

Once this information has been gathered, land managers can develop specific management strategies and objectives to ensure the particular species is adequately managed for across the Regional landscape. Resolution of this Strategic Goal will help address the government priorities of a defined Working Forest and Access to World Markets (i.e. Certification). A comprehensive list of species at risk in the Pacific Region can be found at the following web site:

http://www.env.gov.bc.ca/rib/wis/cdc/tracking.htm

Relationship to Sustainable Forest Management:

The maintenance of environmental values:

Specific strategies and objectives for each species at risk are required to ensure that sufficient habitat is left in the managed forest landscape for the long-term survival of the particular species. It is very important to know where specific habitat exists, how to confidentially extrapolate location of potential habitat using accurate forest cover and ecosystem mapping tools, species numbers and population trends, as well as how Forest Management activities and techniques affect these species. Strategic Planning (LRMP, Landscape Units, etc.) decisions can be made with greater confidence and with a higher probability of success, if species at risk management strategies and objectives are in place.

The sustainable use of timber resources:

Lack of specific management strategies and objectives for Species-at-Risk leads to uncertainty and conservative decisions regarding Timber Supply Reviews, as well as the risk of incomplete or inaccurate decisions for LRMPs, Landscape Unit Objectives and conflicts at the Forest Development Planning level. More detailed knowledge and in turn better management strategies and objectives will ensure TSR decisions are more accurate and that timber flow predictions are more accurate and sustainable over time. Other planning processes will likely be more successfully implemented if better management strategies and objectives are developed.

The sustainable use of non-timber resources:

Non-timber resources are indirectly linked to species at risk given that habitats of certain species are also important to other non-timber resources (i.e. Old-growth nesting habitat for Northern Goshawk's can also be excellent pine mushroom habitat). Therefore, accurate management of species at risk can indirectly benefit non-timber resource values, which in turn can bring more certainty to strategic level plans that are required to address these resource values.

Relationship to Strategic Resource Plans and Decisions:

Strategic Decisions:

High quality Species at Risk Management Strategies and Objectives will bring a higher level of confidence and certainty to Timber Supply Reviews. This information will not be available for this round of TSR determinations (TSR2) for Timber Supply Areas, but will likely be available for the next round of determinations (TSR3). This information may be available for TSR3 determinations on a number of Tree Farm Licenses (TFLs) in the Pacific Region. These include TFL 37, TFL 38, TFL 43, and TFL 54, which are scheduled for determination over the next 2 to 4 years.

Strategic Resource Plans:

A number of LRMPs either proposed or in the early stages of development will benefit from high

quality Species at Risk Management Strategies and Objectives through greater certainty surrounding decision making. These include the Sea-to-Sky LRMP, Sunshine Coast LRMP, and the Queen Charlotte LRMP. Better information will also help with the implementation of the approved Vancouver Island Land Use Plan (VILUP) and the Central Coast Land and Coastal Resource Management Plan (CCLCRMP).
Cross Reference to Management Unit Issues (if applicable): This will be addressed at the Knowledge Strategies portion of the planning process.

TEMPLATE 1: Key Regional SSFM Issues

SSFM Issue # 3:	**Title: Impacts related to Alternate Harvesting Systems**

Overview Description of the Regional Strategic Issue:

Describe the issue in terms of a specific knowledge gap.

There is a need to determine and evaluate the impacts associated with alternate harvesting systems. There is a growing trend to reduce the use of clearcutting as the main silvicultural system on coastal BC, which is due to market pressures, biodiversity requirements and certification efforts. This trend has led to innovative practices that retain various degrees of stand structure or alternative harvesting systems. The impacts of alternative systems in relation to effectiveness of addressing biodiversity concerns have not been fully quantified or modelled. Relevant information regarding impacts to AAC is necessary for determining sustainable harvest levels.

Specific aspects related to Alternate Harvesting Impacts:

- Effectiveness for maintaining or enhancing stand level and landscape level biodiversity.
- Contribution to stand level structures including Coarse Woody Debris (CWD), snags, etc.
- Impacts to AAC
- Relative economic cost to implement

Specific actions required or areas of concern include:

- Operational trials designed to test the impact of alternative harvesting systems
- Effectiveness of alternate harvesting (Variable Retention) to improve representation of natural disturbance patterns.
- Contribution to Old-growth Management Areas (OGMA).
- Building guidelines for applying alternate harvesting systems to address biodiversity/visual quality/ wildlife habitat, (i.e. Developing a scientific rational for alternative harvesting systems).
- Evaluation of alternative harvesting systems for application at a landscape level.
- Linking frequency of alternative harvesting systems with established biodiversity emphasis options.

Relationship to Sustainable Forest Management:

Describe how the issue relates to reducing risk or uncertainty regarding:

The maintenance of environmental values:

Sustainable forest management is defined as; management to maintain and enhance the long-term health of forest ecosystems, while providing ecological, economic, social and cultural opportunities for the benefit of present and further generations, (Canadian Council of Forest Ministers). Implementation of alternative harvesting systems must be environmentally appropriate, economically viable and socially acceptable. Lack of biodiversity can create long-term risks to the health of forested ecosystems (i.e. more susceptible to diseases/insects, lower ability to adapt to climatic changes, etc.), as well as negatively impact upon the environmental, social, and economic benefits flowing from the forest. Broad applications of alternative harvesting may impact sustainable harvest levels based on TSR AAC determinations.

The sustainable use of timber resources:

Uncertainty surrounding Regional biodiversity requirements (Retention of structures related to biodiversity, reserve amounts and locations, etc) all impact upon the accuracy of Timber Supply Reviews (TSR), and can cause these decisions to be overly conservative. This in turn can impact upon harvest levels and associated social and economic benefits. Landscape Unit planning and objective setting may be difficult to develop or implement, and LRMPs may not be optimally implemented. Operational Planning decision such as Forest Development Plans and Silviculture Prescriptions may be controversial and result in an inefficient use of resources.

The sustainable use of non-timber resources:

Risk to non-timber related resources are not well documented.

Relationship to Strategic Resource Plans and Decisions:

Describe how the issue relates to:

Strategic Decisions:

Strategic resource plans make reference to ecosystem based forest management. Alternative harvesting systems may play a key role in implementing ecosystem-based management.

Strategic Resource Plans:

As described, better information will provide greater certainty to both TSR and LRMP/LU plans and decisions. Though too late for TSR2 on TSAs and TFLs, this information may be available for TSR3 determinations on TSAs and a number of Tree Farm Licenses (TFL) in the Pacific Region. These include TFL 37, TFL 38, TFL 43, and TFL 54, which will have determinations made in the next 2 to 4 years

Cross Reference to Management Unit Issues (if applicable):

Will be dealt with at the Knowledge Strategies portion of the planning process.

TEMPLATE 1: Key Regional SSFM Goals

SSFM Goal # 4:	**Title: Need for Fish and Fish Habitat (Aquatic and Terrestrial) Management Strategies and Objectives**

Overview Description of the Regional Strategic Goal:

There is a need to determine appropriate management strategies and objectives for Fish and Fish Habitat to ensure that fisheries and related riparian resource values are being adequately managed for across the Regional landscape.

In other words how will improved management strategies and objectives for fish and fish habitat provide land managers with enough information and tools to ensure that these resource values are being adequately managed for across the Region? Specifically there is a need to obtain more reliable knowledge to develop acceptable fisheries and fisheries habitat management strategies and objectives. This includes:

- Inventory/Census of specific and regional fisheries population levels. This includes 1:20000 Reconnaissance Inventory information for whole watersheds (lakes and streams) on fish species, life histories, distribution and relative abundance in priority areas.
- Population trends – which streams and lakes are in decline, stable, or recovering.
- Stream reach and lake biophysical data for interpretation of habitat sensitivity and capability for fish production. (i.e. Riparian classification)
- Impacts of management practices (i.e. rate of cut, silviculture systems, etc.).
- Quality of existing terrestrial riparian habitats that influence fish populations. This includes PEM and TEM of these riparian habitats.
- Function and interactions of riparian ecosystems (i.e. LOD recruitment, windthrow, etc).
- Impacts of unstable terrain on stream and riparian ecosystems.

NOTE: From an administrative perspective it is important to separate fish inventories from riparian classification. Streams that are inventoried for fish presence must meet fairly rigorous RIC standards to be acceptable. Stream classification however can be dealt with through simple dimensional measurements and assumptions regarding presence of fish.

Riparian classification therefore will be treated separately from fish inventories as the knowledge strategies and projects are developed for this Strategic Goal. Riparian Classification will be addressed as part of Goal #1 – Resource Inventories.

Once reliable knowledge is obtained then resource managers can develop specific management strategies and objectives. This information can also be used to help support and define the Living Rivers Strategy.

Relationship to Sustainable Forest Management:

The maintenance of environmental values:

Specific strategies and objectives for Fish and Fish Habitat are required to ensure in the long-term that sufficient numbers of each species and associated riparian habitat are remaining on the managed regional forest landscape. It is important to be able to accurately determine where in the Region fisheries resource values exist and how critical these values are relative to the surrounding geographic areas. It is also important to determine the quality of existing habitats, fish population numbers and trends, as well as the function of riparian habitat in the short and long-term survival of overall fish populations. Strategic level planning processes such as TSR and LRMP will benefit from this information, since it will allow land managers to develop specific strategies and objectives, and in turn make more accurate and informed decisions surrounding fish and fish habitat resource values.

The sustainable use of timber resources

Timber supply is negatively affected since large areas of affected riparian habitat are removed from active timber management via legislated requirements. In other words TSR decisions are forced to be conservative and are made a much more uncertain environment. Conversely, poor quality information may result in too high a harvest level being set and may underestimate the available riparian habitat on the ground. Better inventories, stream classifications, and determinations of habitat requirements and interactions will ensure that any TSR determinations are more accurate and reflect the actual physical conditions on the ground.

The sustainable use of non-timber resources:

Improved fish and fish habitat strategies and objectives will indirectly have impacts upon water quality and quantity. Water quality may either improve or decline depending upon the focus of the management strategies and objectives (i.e. timber supply as a priority vs. fisheries resource values as a priority). The particular management objectives and strategies chosen will affect any related resource value that is associated with riparian habitat.

Relationship to Strategic Resource Plans and Decisions:

Strategic Decisions:

High quality Fish and Fish Habitat Management Strategies and Objectives will bring a higher level of confidence and certainty to Timber Supply Reviews. This information will not be available for this round of TSR determinations (TSR2) for Timber Supply Areas (TSAs), but will likely be available for the next round of determinations (TSR3). This information may be available for TSR3 determinations on a number of Tree Farm Licenses (TFLs) in the Pacific Region. These include TFL 37, TFL 38, TFL 43, and TFL 54 which will have determinations made over the next 2 to 4 years.

Strategic Resource Plans:

A number of LRMPs either proposed or in the early stages of development will benefit from high quality Fish and Fish Habitat Management Strategies and Objectives through greater certainty surrounding decision-making. These include the Sea-to-Sky LRMP, Sunshine Coast LRMP, and the Queen Charlotte LRMP. Better information will also help with the implementation of the approved Vancouver Island Land Use Plan (VILUP) and the pending Central Coast Land and Coastal Resource Management Plan (CCLCRMP).

Cross Reference to Management Unit Issues (if applicable):

To be addressed at the Knowledge Strategies portion of the planning process.

TEMPLATE 1: Key Regional SSFM Goal

SSFM Goal # 5:	**Title: Lack of Regional Biodiversity Management Guidelines**

Overview Description of the Regional Strategic Goal:

Describe the goal in terms of a specific knowledge gap.

There is a need to determine appropriate Regional Biodiversity Management Guidelines including Management Objectives and Strategies to ensure that resource values associated with biodiversity are adequately managed over the Regional Landscape. In other words, land managers must be given the proper information and tools to ensure biodiversity is adequately managed for. This information is especially important for the determination of Landscape Unit Objectives. A biologically diverse (ecosystem, structural, species, genetic, processes, etc) forested landscape is recognised as being critical to the maintenance of productive and resilient forests. This in turn provides a sustainable flow of environmental, social, and economic benefits over time. The concepts of a Working Forest can be addressed by ensuring that biodiversity is being adequately managed across the regional landscape. It also improves Access to World Markets through increased opportunities for Certification.

Specific aspects of Biodiversity include:

- Landscape and Stand levels of Biodiversity.
- Fragmentation of habitats including edge effects, etc.
- Impacts of various opening sizes.
- Seral stage distribution across the landscape.
- Stand level structures including Coarse Woody Debris (CWD), snags, etc.
- Reserves and linkages (connectivity) between reserves.

Specific actions required or areas of concern include:

- Baseline Inventories for priority areas. Includes TEM and PEM at appropriate levels.
- Landscape-level analysis and monitoring (tools, techniques, and information).
- Establishment of Old-growth Management Areas (OGMA).
- Effectiveness and distribution of Wildlife Tree Patches (WTP).
- Stand-level Biodiversity attribute management (i.e. CWD, snags, etc.).
- Habitat fragmentation concerns.
- Habitat connectivity requirements.

Relationship to Sustainable Forest Management:

Describe how the goal relates to reducing risk or uncertainty regarding:

The maintenance of environmental values:

It is important to define, quantify and ensure appropriate levels of biodiversity-related values are maintained across the Regional landscape. Much of the present forest cover information does not provide adequate information to successfully address the biodiversity potential for given stand(s). Lack of biodiversity can create long-term risks to the health of forested ecosystems (i.e. more susceptible to diseases/insects, lower ability to adapt to climatic changes, etc.), as well as negatively impact upon the environmental, social, and economic benefits flowing from the forest.

The sustainable use of timber resources:

Uncertainty surrounding Regional biodiversity requirements (Retention of structures related to biodiversity, reserve amounts and locations, etc) all impact upon the accuracy of Timber Supply Reviews (TSR), and can cause these decisions to be overly conservative. This in turn can impact upon harvest levels and associated social and economic benefits. Landscape Unit planning and objective setting may be difficult to develop or implement, and LRMPs may not be optimally implemented. Operational Planning decision such as Forest Development Plans and Silviculture Prescriptions may be controversial and result in an inefficient use of resources. Not resolving this Strategic Goal will likely hinder the determination and implementation of a Working Forest, since key variables will not be easily managed. As well, lack of resolution will decrease access to World Markets, because Certification requirements will not be easily met.

The sustainable use of non-timber resources:

The proper management and provision of biodiversity related resource processes and structures over the Regional landscape should provide some certainty that many non-timber resource values are being adequately provided for. For example, the utilisation of botanical forest products such as pine mushrooms will benefit from the establishment of large OGMAs in mature seral stage forest types.

Relationship to Strategic Resource Plans and Decisions:

Describe how the goal relates to:

Strategic Decisions:

Strategic level planning initiatives such as LRMPs and setting Landscape Unit Objectives require accurate information to ensure that biodiversity related structures and processes are adequately managed across the landscape. If this information is not available or is of low quality, then there is an increased probability that these planning initiatives will not succeed. A number of LRMPs either proposed or in the early stages of development will benefit from this information through greater certainty surrounding decision making. These include the Sea-to-Sky LRMP, Sunshine Coast LRMP, and the Queen Charlotte LRMP. Better information will also help with the implementation of the approved Vancouver Island Land Use Plan (VILUP) and the Central Coast Land and Coastal Resource Management Plan (CCLCRMP).

Strategic Resource Plans:

As described, better information will provide greater certainty to both TSR and LRMP/LU plans and decisions. Though too late for TSR2 on TSAs and TFLs, this information may be available for TSR3 determinations on TSAs and a number of Tree Farm Licenses (TFL) in the Pacific Region. These include TFL 37, TFL 38, TFL 43, and TFL 54, which will have determinations made in the next 2 to 4 years

Cross Reference to Management Unit Issues (if applicable):

This will be addressed at the Knowledge Strategies of the planning process.

TEMPLATE 1: Key Regional SSFM Goals

SSFM Goal # 6:	**Title: Lack of Ungulate Habitat Management Strategies, Objectives and Guidelines**

Overview Description of the Regional Strategic Goal:

There is a need to determine appropriate management strategies, objectives and guidelines for Ungulate Habitat in the Pacific Region. **Of highest importance is the need to focus on Ungulate Winter Range (UWR), since this is the most critical Habitat element required for ungulate life cycles.**

The question therefore is, how will improved management strategies, objectives and guidelines for Ungulate Habitat provide land managers with enough information and tools to ensure that this resource value, and impacts on other resource values are being adequately managed across the Region? Basic information/knowledge collection would include:

- Location of Ungulate Winter Range for all ungulate species (deer, elk, mountain goat) of management concern.
- Location of other critical habitats (Spring forage habitat, adequate summer range habitat, travel corridors, etc. for ungulates across the regional landscape.
- Population trends in various landscape/management units.
- Quality and quantity of existing habitats (baseline inventories and classifications – TEM, PEM and habitat capability and suitability mapping) in areas of management concern and/or potential conflict.
- Research into the creation of habitat in 2nd and 3rd growth stands (links to SH).

After reliable knowledge is collected then specific management strategies, objectives and guidelines can be developed to support Strategic Level Planning initiatives. These efforts will also ensure Certification efforts (Access to World Markets) and

Relationship to Sustainable Forest Management:

The maintenance of environmental values:

Lack of suitable winter range is considered to be one of the most limiting factors in ungulate annual cycles. Therefore, it is important to determine what constitutes suitable ungulate winter range, where on the landscape it exists, what direction ungulate populations are trending, and where future ungulate winter range will be developed either naturally through succession, or through specific 2nd-growth management practices. The ultimate objective is to provide a stable supply of ungulate winter range over time.

Other habitat requirements must also be considered in management decisions. High quality Ungulate Winter Range in isolation from other seasonal habitats or travel corridors would not be adequate enough to effectively manage these animal species.

The sustainable use of timber resources:

Lack of clear objectives, strategies and guidelines for ungulate habitats, especially Ungulate Winter Ranges, creates uncertainty in determining harvest levels, since land managers are unsure of the amount of habitat required to maintain regional and management unit ungulate populations over time. TSR net downs and determinations will not likely reflect accurate harvest levels, which may result in too little or too much ungulate winter range. Land and Resource Management Plans and Landscape Unit objectives will likely be more difficult to develop or implement without this information. Operational level planning such as Forest Development Plans and Silviculture Prescriptions will remain controversial and inefficient. Therefore, better strategies, objectives and guidelines for Ungulate Habitat, particularly Ungulate Winter Range will create a more stable Timber Supply over time and lead to more accurate and informed decisions.

The sustainable use of non-timber resources:

Clarification of Ungulate Habitats may allow other non-timber resources (i.e. botanical forest products) to be managed for on the same portions of the land-base actively being managed for this purpose. This is especially true of Ungulate Winter Range, which is generally concentrated in areas of mature or old growth forests. This has the potential to reduce impacts to timber resources through multiple resource management on one portion of the landscape. Strategic decisions can therefore be made with more certainty that multiple resource values are being adequately accounted for.

Relationship to Strategic Resource Plans and Decisions:

Strategic Decisions and Strategic Resource Plans

Ungulate Winter Range management is a legislated component of the Vancouver Island Land Use Plan (VILUP) as an approved Higher Level Plan. Also, as defined in the Forest Practices Code of British Columbia Act, Ungulate Winter Ranges must be declared by October 15, 2003. This fact makes the resolution of this issue a high priority.

Better Ungulate Winter Range objectives, strategies, and guidelines will also help to resolve issues and improve chances for successful completion and implementation of the ongoing Central Coast LRMP and Queen Charlotte LRMP, and the upcoming Sea-to-Sky and Sunshine Coast LRMPs.

Operational Planning will be more reliable and result in greater ease of access to timber and non-timber resources by ensuring that all resource values are addressed accurately up front in the TSR planning process. TSR2 is either complete or too far advanced for the TSAs within the Pacific Region for Ungulate Winter Range information to be used. It should be available for TSR3 on TSAs, and for a number of TFLs. These include TFL 37, TFL 38, TFL 43, and TFL 54, all of which will require TSR3 determinations to be made over the next 2 to 4 years.

Cross Reference to Management Unit Issues (if applicable):

Will be addressed at the Knowledge Strategies portion of the planning process.

TEMPLATE 1: Key Regional SSFM Goal

SSFM Goal # 7:	**Title: Need to Strengthen Forest Modelling**

Overview Description of the Regional Strategic Goal:

Describe the Goal in terms of a specific knowledge gap.

There is a need to strengthen and improve current forest modelling processes presently used within the Region, to provide better real and predictive information to land managers and decision makers. Better and more refined Models are required that predict quantity, quality and responsiveness of management decisions and scenarios of all forest resource values. This includes:

- Timber Supply Models.
- Growth and Yield stand and forest-level models (i.e. TASS, VDYP, Prognosis BC, TIPSY, etc.).
- Impacts of Alternate Silviculture System Modelling.
- Site Index models (i.e. Growth-intercept, etc.).
- Wildlife Species-Habitat Models.
- Fish-Habitat Models.
- Site Index-Biogeoclimatic Ecosystem Classification (SIBEC) models.
- Old-growth adjustment models.
- Etc.

Relationship to Sustainable Forest Management:

Describe how the Goal relates to reducing risk or uncertainty regarding:

The maintenance of environmental values:

Stronger models, especially those that predict the impacts and interactions between environmental resources and timber resources will allow land managers to better determine how management decisions will potentially impact the supply and quality of these environmental resource values in both time and space.

The sustainable use of timber resources:

Risks and uncertainties to timber resources will likely be reduced with the refinement of timber related models. At present decisions are being made with sometimes unacceptably high levels of uncertainty. This in turn does not optimise the mix of timber, non-timber, and environmental resource values being managed for across the Region. If Decision-makers are provided higher quality models, they could then be in a better position to make more accurate determinations regarding AAC levels within individual Management Units.

The sustainable use of non-timber resources:

Uncertainty in models that predict timber and environmental (i.e. habitat) resource values, creates uncertainty in decisions relating to the management of non-timber resource values. Retaining appropriate amounts of quantifiable non-timber resource values in time and space would be difficult to determine, and appropriate decisions would be difficult to rationalise and justify. If models were available to more accurately predict all resource values then non-timber values could be more reliably managed for.

Relationship to Strategic Resource Plans and Decisions:

Strategic Decisions:

TSR decisions would benefit by improved Models since this would allow relationships and impacts between resource values (i.e. timber harvest and habitat requirements) to be more reliably and accurately described and predicted. Harvest level decision could be made with greater certainty and would be more accurate over time. Operational Planning will be more reliable and result in greater ease of access to timber and non-timber resources by ensuring that all resource values are addressed accurately up front in the TSR planning process.

Strategic Resource Plans:

A number of LRMPs either proposed or in the early stages of development will benefit from high quality Models through greater certainty surrounding the quantification of various resource values. This will likely lead to better and more reliable decision-making. LRMPs include the Sea-to-Sky LRMP, Sunshine Coast LRMP, and the Queen Charlotte LRMP. Better information will also help with the implementation of the approved Vancouver Island Land Use Plan (VILUP) and the Central Coast Land and Coastal Resource Management Plan (CCLCRMP).

Cross Reference to Management Unit Goals (if applicable):

To be dealt with at the Knowledge Strategies portion of the planning process.

TEMPLATE 1: Key Regional SSFM Issues

SSFM Goal # 8:	**Title: Need for Water Quality and Quantity Management Strategies and Objectives**

Overview Description of the Regional Strategic Goal:

Describe the goal in terms of a specific knowledge gap.

There is a lack of Water Quality and Quantity Management Strategies and Objectives within the Pacific Region. Therefore, what information and tools must be provided to land managers to develop management strategies and objective so they can ensure that water quality and quantity are adequately managed for over the Regional landscape?

Specifically this includes:

- Inventory of water bodies (i.e. streams, lakes, etc) to obtain baseline data with focus on areas of management concern.
- Water monitoring over the Regional landscape (i.e. network of monitoring stations, gaps in Regional coverage, etc.).
- Impacts of forest management activities on quantity and quality of water flow in community watersheds, fish streams and domestic water intakes, etc. (Link to EEV)

Once this base-line information has been gathered, land managers can develop specific management strategies and objectives. As well, the Living Rivers Strategy is in part addressed through this Strategic Goal.

Relationship to Sustainable Forest Management:

The maintenance of environmental values:

Specific strategies and objectives for water quality and quantity are required to ensure that the social and environmental values associated with clean water are met. It is very important to quantify baseline water quality inventories, to know where areas of concern exist, how forest management activities impact upon water quality and quantity, and measures that can be taken to ensure that water quality and quantity are maintained in the managed landscape. Strategic Planning (LRMP, Landscape Units, etc.) decisions can be made with greater confidence and with a higher probability of success, if water quality and quantity strategies and objectives are developed and put into effect. Measuring water quality at the base of a given watershed gives a holistic understanding of how restoration and land use practices are impacting water quality and quantity.

The sustainable use of timber resources:

Lack of specific management strategies and objectives for water quality and quantity can impact upon the successful implementation of Landscape Unit Objectives and can increase conflicts at the Forest Development Planning level. More detailed knowledge and in turn better management strategies and objectives will ensure management planning in general and TSR decisions are more accurate and that timber flow predictions are more accurate and sustainable over time. Other planning processes will likely be more successfully implemented if better management strategies and objectives are developed.

The sustainable use of non-timber resources:

Non-timber resources are indirectly linked to water quality and quantity such as fisheries, riparian values, wildlife management, as well as recreational, agricultural, and domestic water use. Indirectly, resource values such as recreation, visual management, land value and tourism all link to water quality and quantity. Therefore, the high standard of management for water quality and quantity can directly and indirectly benefit non-timber resource values, which in turn can bring more certainty to strategic level plans.

Relationship to Strategic Resource Plans and Decisions:

Describe how the goal relates to:

Strategic Decisions:

Water Quality and Quantity Strategies and Objectives will provide a higher level of confidence and certainty to forest management planning requirements and operations. This in turn provides a level of accuracy to the Timber Supply Reviews that helps ensure the on-the-ground attainment of the current AAC determinations and guides future determinations. This information will not be available for this round of TSR determinations (TSR2) for Timber Supply Areas, but will likely be available for the next round of determinations (TSR3). This information may be available for TSR3 determinations on a number of Tree Farm Licenses (TFLs) in the Pacific Region. These include TFL 37, TFL 38, TFL 43, and TFL 54.

Strategic Resource Plans:

A number of LRMPs either proposed or in the early stages of development will benefit from establishing Water Quality and Quantity Strategies and Objectives through greater certainty surrounding decision making. These include the Sea-to-Sky LRMP, Sunshine Coast LRMP, and the Queen Charlotte LRMP. Better information will also help with the implementation of the approved Vancouver Island Land Use Plan (VILUP) and the Central Coast Land and Coastal Resource Management Plan (CCLCRMP).

Cross Reference to Management Unit Issues (if applicable):

Water quality concerns and issues do not fit well into geographically artificial management units. Concerns are best kept to a watershed unit level, which are independent of management units.

SSFM Issue # 9:	Title: Unreliable or Incomplete Cultural Heritage Inventories

Overview Description of the Regional Strategic Issue:

There is a need to locate, map and inventory areas considered to be of cultural heritage significance. Much of the information regarding the locations of heritage sites is unknown at the present time. Therefore, strategic planning processes often lack the ability to make optimal decisions regarding cultural heritage values due to the uncertainty and lack of confidence surrounding incomplete or unreliable inventories for those resource values of management concern. In addition, the present lack of said inventories leads to potential conflicts and delays in accessing timber and non-timber resources due to the inability of various government and industry agencies to address First Nations concerns in a timely, efficient and reliable manner.

Relationship to Sustainable Forest Management:

The maintenance of environmental values:
Given the social nature of this Strategic Objective, the link to environmental values is limited.
The sustainable use of timber resources:

Unreliable or incomplete information regarding cultural heritage resources creates uncertainty for timber resource use planning. Regional Land Use Planning decisions may not be effectively implemented, Landscape Unit Objectives may be difficult to determine or implement, and Timber Supply Reviews will have higher levels of uncertainty. Operational Planning and assessments will continue to be costly and delays in decision making may occur as cultural heritage sites continue to be located on a block by block basis. Not resolving this Strategic Goal will likely hinder the determination and implementation of a Working Forest, and decrease access to World Markets.

The sustainable use of non-timber resources:
Potential damage to cultural heritage sites may occur due to inaccurate or incomplete information regarding cultural heritage resources when accessing crown lands for timber or non-timber use. First Nations continually express concerns regarding the potential accidental destruction of these resources and possible desecration of sacred sites due to lack of knowledge of their existence.

Relationship to Strategic Resource Plans and Decisions:

Strategic Decisions:

Reliable Cultural Heritage Inventories will allow Timber Supply Reviews to more accurately quantify the impacts of existing cultural heritage resources on the timber and non-timber resources of the Regional land base, decreasing the uncertainty surrounding harvest levels. Operational Planning will be more reliable and result in greater ease of access to timber and non-timber resources by ensuring that First Nations concerns over cultural heritage sites are addressed accurately up front in the planning process.

Addressing Cultural Heritage issues is considered part of sustainable forest stewardship and as such, better cultural heritage resource inventories could aid in various licensees and government agencies attaining certification. Thus increasing access to various national and international markets.

Strategic Resource Plans:

A number of LRMPs either proposed or in the early stages of development will benefit from this information through greater certainty surrounding decision making. These include the Sea-to-Sky LRMP, Sunshine Coast LRMP, and the Queen Charlotte LRMP. Better information will also help with the implementation of the approved Vancouver Island Land Use Plan (VILUP) and the Central Coast Land and Coastal Resource Management Plan (CCLCRMP).

Cross Reference to Management Unit Issues (if applicable):

Vancouver Region: AIA Tracking - As part of the process for the Chief Forester to determine the land base net down for cultural heritage resources, a method for tracking the areas, surveyed, results and management prescriptions is needed. This tracking is also important for assisting in assessment of predictive models developed in archaeological overview assessments. A pilot in the Campbell River forest district was conducted. Further work is needed to use this approach in other areas.
Also, the identification of areas that are suitable for large old growth cedar management for cultural use (canoe building and poles) is an important issue. First nations see a crisis in cedar availability for future cultural use due to increased harvest of old growth cedar stands.

Central Coast - All parties (Midcoast TSA, Mainland Kingcome, Strathcona TSAs, TFL 47, 25, 39 45) are questioning the predictive capacity of the archaeological overview assessment developed for the central coast.

Campbell River Forest District - Baseline data and overview assessment lacking in the east coast region of the CRFD (Strathcona TSA, TFL 37, 39, 45, 47)

Midcoast Forest District – Difficulties have been encountered in conducting landscape unit planning and land and resource management planning due to the lack of specific cultural heritage information in some highly sensitive cultural areas identified by the Nuxalk Nation. Licensees and MOF require further field information to plan in the landscape units.

Sunshine Coast Forest District – Licensees pursuing certification do not have a tool for assisting to manage cultural heritage resources. Also, first nations are concerned about the management of archaeological resources and are making recommendations based on inadequate information sources. (TFL 39, TFL 10, SCTSA).
The district is experiencing difficulties accessing timber within the Sechelt Indian Band's traditional territory. The Sechelt Band insists that Archaeological Overview Assessments or Archaeological Impact Assessments be completed for every block before giving their approval for harvesting. This is causing serious timber supply impacts to the district. This is both costly and inefficient.

Squamish Forest District – The predictive capacity of the archaeological overview assessment developed for the Squamish Forest district has been questioned due to the lack of information used in developing the model. (TFL 38, Soo TSA) Also a planning process will be initiated and cultural heritage resource management strategies and objectives need to be developed.

South Island Forest District - Both major licensees and the TSA are in need of some baseline data to assist in predicting the potential for archaeological sites and development of strategies for managing these sites to support implementation of higher level plans, LUPs and certification efforts. (Arrowsmith TSA, TFL 46, 44, 6, 54). Also, better information is needed for the Timber Supply Review process to accurately predict AAC impacts due to the existence of cultural heritage sites across the landbase.

Chilliwack Forest District - A predictive model was developed for the northern portion of the Chilliwack district, however the model was not tested to confirm the baseline data and assumptions.

Strategies:

Recognising that inventory across the landscape is not practical. Efforts should be focused on developing, refining and using archaeological overview assessments (AOA) which are a predictive tool for identifying the potential for archaeological sites to be on the landscape. An AOA can assist in developing a net down for cultural heritage resource management for timber supply analysis. This would be done through compiling and analysing existing information on cultural heritage resource management within that management unit and estimating effects of the same management approach across the land base using the predictive models developed in AOAs.

An AOA as well as archaeological inventory (AIS) can assist in development of management strategies and objectives for cultural heritage resources in higher level planning and development of forest stewardship plans in relation to certification efforts by licensees and in relations to landscape unit planning activities (Midcoast, South Island FD, parts of Campbell River FD, Port McNeill, Sunshine Coast FD).

Existing AOAs should be refined to better predict the likelihood of archaeology sites using new information on site locations collected through archaeological inventories or impact assessments, as well as more localised resource information (Mid Coast, Port McNeill, Campbell River, Squamish Forest Districts, Chilliwack).

An analysis of existing information should be conducted to assist in tracking the impacts of cultural heritage resource management for TSR and for refining the existing models.

Appendix I. Agency and Stakeholder Strategic Goal Inputs

AGENCY/STAKEHOLDER	STRATEGIC GOAL INPUT
MSRM/MWLAP (Vancouver Island)	Various – Water Quality and Quantity, Species at Risk, Ungulate Winter Range
MSRM/MWLAP (Lower Mainland)	Various – Species at Risk, Ungulate Winter Range, Biodiversity, Water Quality and Quantity
MSRM/MWLAP (Cariboo)	Various – Fish and Fish Habitat, Ungulate Winter Range, Species at Risk, Resource Inventories
MSRM/MWLAP (Skeena)	Various – Biodiversity, Fish and Fish Habitat, Species at Risk, Resource Inventories
MOF (Port McNeill)	Working Forest, Resource Inventories
MOF (QCI)	Working Forest
MOF (South Island)	Cultural Heritage Inventories (AOA), Riparian Classification
MOF (Mid-Coast)	Resource Inventories
MOF (Sunshine Coast)	Resource Inventories, Cultural Heritage Inventories
Interfor	Resource Inventories, Certification, Working Forest
Weyerhaeuser	Resource Inventories, Strengthen Forest Modelling, Certification
TimberWest	Species at Risk (Marbled Murrelet/Northern Goshawk), Impacts of Alternate Harvesting, Resource Inventories

Appendix J. Interim Knowledge Strategies for the 2002-2003 SSFM RMP

STRATEGIC GOAL 2002-2003 RMP	PROPOSED ISSUES FROM THE 2001-2002 PACIFIC RMP
#1. Unreliable or Lack of Resource Inventories	Need to establish and improve access to baseline inventories for various planning initiatives
	Need to refine, update and standardise ecological classification for various planning initiatives
	Need to refine, update and standardise terrain classification for various planning initiatives.
	Need to refine, update and standardise vegetation classification for various planning initiatives.
#2. Lack of Species at Risk Management Strategies and Objectives	Need to refine appropriate management strategies for Marbled Murrelets.
	Uncertainty around timber supply impacts associated with Identified Wildlife Management Strategies.
	Need to refine appropriate management strategies for Grizzly Bear and Black Bear.
	Uncertainty around management strategies and timber supply impacts associated with maintaining rare and endangered plants and ecosystems.
	Need to refine appropriate management strategies for predatory birds (i.e. Northern Goshawks).
	Need to refine appropriate management strategies for the Spotted Owl.
#3. Impacts related to Alternate Harvesting Systems	Uncertainty around Growth and Yield of future stands affected by various silviculture systems.
	Uncertainty around management strategies and timber supply impacts associated with ecosystem based management.
	Uncertainty around management strategies and timber supply impacts associated with silviculture systems.
	Opportunities to mitigate timber supply impacts associated with visual inventories
#4. Need for Fish and Fish Habitat Management Strategies and Objectives	Need to refine appropriate management strategies for Fish and Fish Habitat.
#5. Lack of Regional Biodiversity Management Guidelines	Uncertainty around management strategies and timber supply impacts associated with managing for landscape level biodiversity
	Uncertainty around management strategies and timber supply impacts associated with stand-level biodiversity.
	Need to refine landscape-level biodiversity monitoring programs.
#6. Need for Ungulate Habitat Management Strategies, Objectives and Guidelines	Need to refine appropriate management strategies for ungulates.
7. Need to Strengthen Forest Modelling	Need to refine, develop and improve access to planning models
	Need to establish and improve access to sample data.
	Uncertainty around management strategies and timber supply impacts associated with simulating natural forest conditions.
	Need to refine site productivity estimates applied to growth and yield for future stands.
	Need to refine operational adjustment factors applied to growth and yield of future stands.
	Need to establish and maintain installations in support of growth and yield of future stands.

#8. Need for Water Quality and Quantity Management Strategies and Objectives	Uncertainty around strategies and timber supply impacts associated with managing for water quality and quantity.
#9. Unreliable or Incomplete Cultural Heritage Resource Inventories	Need to refine methods for addressing cultural heritage resources.
	Uncertainty around strategies and timber supply impacts associated with maintaining archaeological sites.